KPSx Kiosk Printer

USER'S MANUAL

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IMPORTANT

This manual contains the basic operations for running your printer.

Read it carefully before using your printer.

Pay special attention to the chapter 12 “RECOMMENDATIONS”.

EVOLUTIONS

Date	Issue	Modifications
03/2010	Z	CREATION OF A PRELIMINARY VERSION OF THE USER'S MANUAL
07/2010	A	Add KPSM version
22/11/10	B	Add minimum core roll diameter for KPSH et KPSM
05/04/12	C	Add of KPSP version
07/05/13	D	Add of KPSP dimensions, increase of max roll diameter, and minor corrections

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1. OVERVIEW

Based on static thermal printing technology, the KPSx range offers high performances within reduce dimensions and a cost effective price level. This new kiosk disposes of 4 main configurations and attractive features such as:

- High printing speed (up to 250mm/s)
- High printing quality even on a thick paper (up to 185µm)
- A paper jam detection or a loop presentor system
- A paper roll holder offering the possibility to handle large paper rolls thanks to its 3 different angular positions and its 2 different hard points for the metal axis
- Etc…

The different available versions of the KPSx range are:

- **KPSL** (a "**L**ight" configuration):
  - Space-saving structure
  - Width of the paper roll: 58 mm or 60 mm
  - Maximum paper thickness: 100 µm
  - Integration into the customer's environment: By fixing the kiosk on its left/right side or on its bottom
  - No potential addition of a paper roll holder
  - Designed for a Cut and Drop paper output.

- **KPSM** (Same as KPSL + paper Jam detection system)

- **KPST** (a "**T**hick paper" configuration):
  - Space-saving structure
  - Width of the paper roll: 54 mm
  - Paper thickness: From 100 µm to 185 µm
  - Integration into the customer's environment: By fixing the kiosk on its left/right side or on its bottom
  - No potential addition of a paper roll holder
  - No paper jam system

- **KPSH** (a "**H**eavy" configuration):
  - Width of the paper roll: 58 mm or 60 mm
  - Maximum paper thickness: 100 µm
  - Integration into the customer's environment: By fixing the kiosk on its front side or on its bottom
  - Optional paper roll holder with a near paper end sensor
  - Paper jam system (paper print is stopped when paper output is blocked preventing a permanent paper jam).

- **KPSP** (a paper Loop Presentor configuration)
  - Width of the paper roll: 58 mm or 60 mm
  - Maximum paper thickness: 100 µm
  - Integration into the customer's environment: By fixing the kiosk on its bottom
  - Optional paper roll holder with a near paper end sensor
  - Paper loop presentor that allows printing and cutting the receipt before output.
  - Optional green bezel output

The table below lists the mechanical specifications of the KPSx serie.

SUMMARY REPORT OF THE PRINTER SPECIFICATIONS

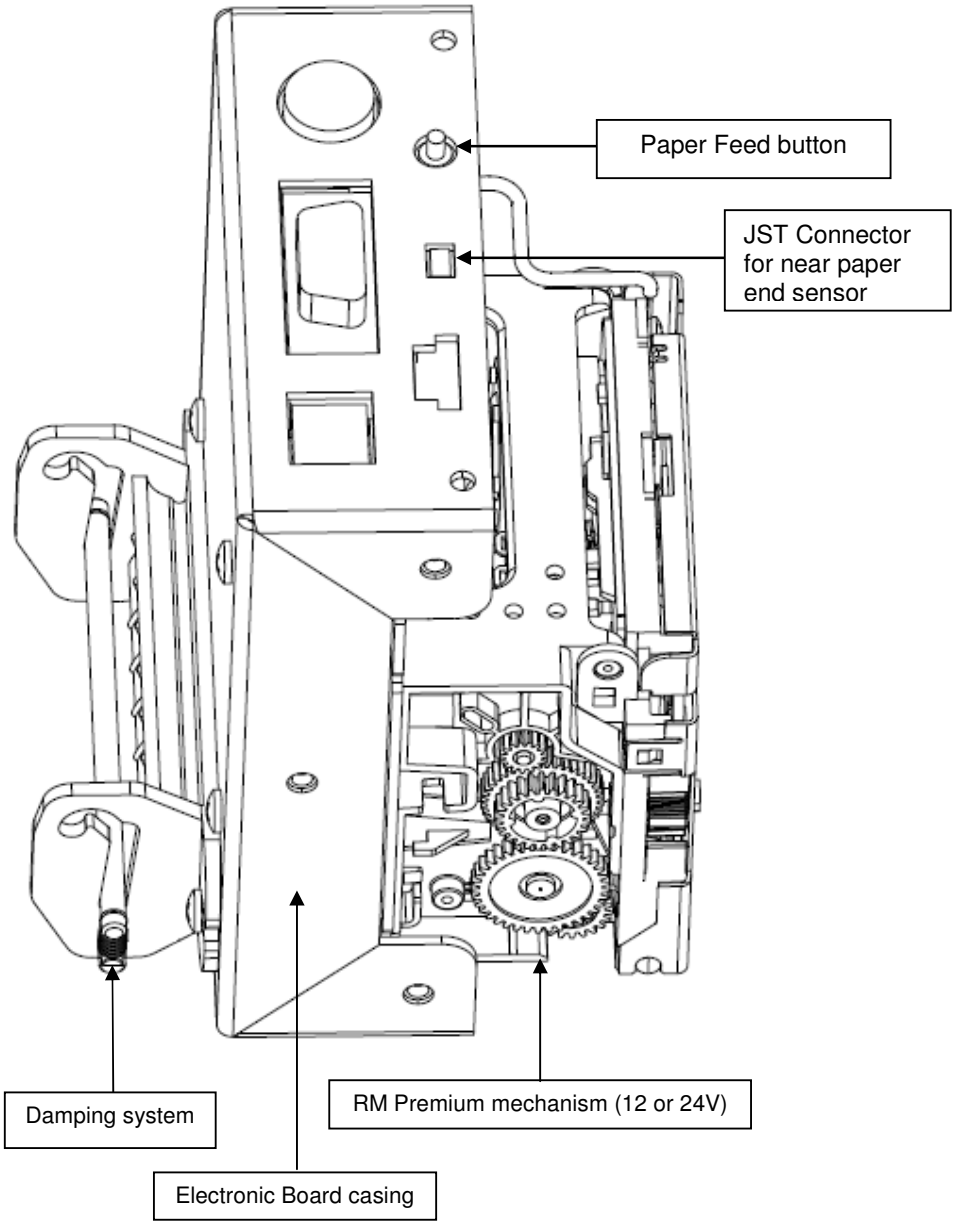
ITEM	UNIT	VALUE	
Printing method	/	Static thermal dot line printing	
Operating voltage	V	12	24
Paper width	mm	60 / 58 / 54	
Dots density	dots/mm	8	
Number of dots/line	/	448 / 448 / 416	
Printing width	mm	56 / 56 / 52	
Paper feed pitch	mm	0.125	
Paper thickness	µm	From 60 to 185	
dimension D x W x H	mm	KPSL, KPST, KPSM : 93 x 95 x 118 KPSH: 120 x 125 x 118 KPSP: 181x 125 x 118	
Operating temperature range	°C	-25 to +65	
Storage temperature range	°C	-30 to +70	
Relative humidity	%	20 to 85	
Mechanical life time	km	100	
Electrical life time	pulses	10^{8}	
Cutter type	/	Guillotine, partial & full cut	
Cutter lifetime	cuts	Up to 1 million	
Max printing speed	mm/s	Up to 150	Up to 250
Max roll diameter **Min roll diam KPSH KPSM**	mm	250* 30	
Paper loading	/	Autoload	
Max duty cycle	%	KPSL & KPSH & KPSP : 14** KPST : 11**	
Recommended paper	/	KPSL & KPSH & KPSP : Jujo AF50KSE3 / Kanzan KLS46 KPST : Kanzan KPO 415sB+	
Communication interface	/	RS232 & USB2.0 for KPSL, KPSH, KPSM, KPST RS232 only for KPSP	
Power supply	/	HOSIDEN connector only	
Features	/	- Paper feed button - Top Of Form sensor - Connector for near paper end sensor - Paper Jam sensor (***KPSH & KPSM***) - Paper Loop Presentor (KPSP) - Paper roll holder with a near paper end sensor (as an ***option*** for the ***KPSH and KPSP***)	

* Angular positions of the paper roll holder (option for the KPSH): +20°, 0° & -20°

** With AXIOHM standard test conditions (which are mainly: 12V or 24V & 25°C)

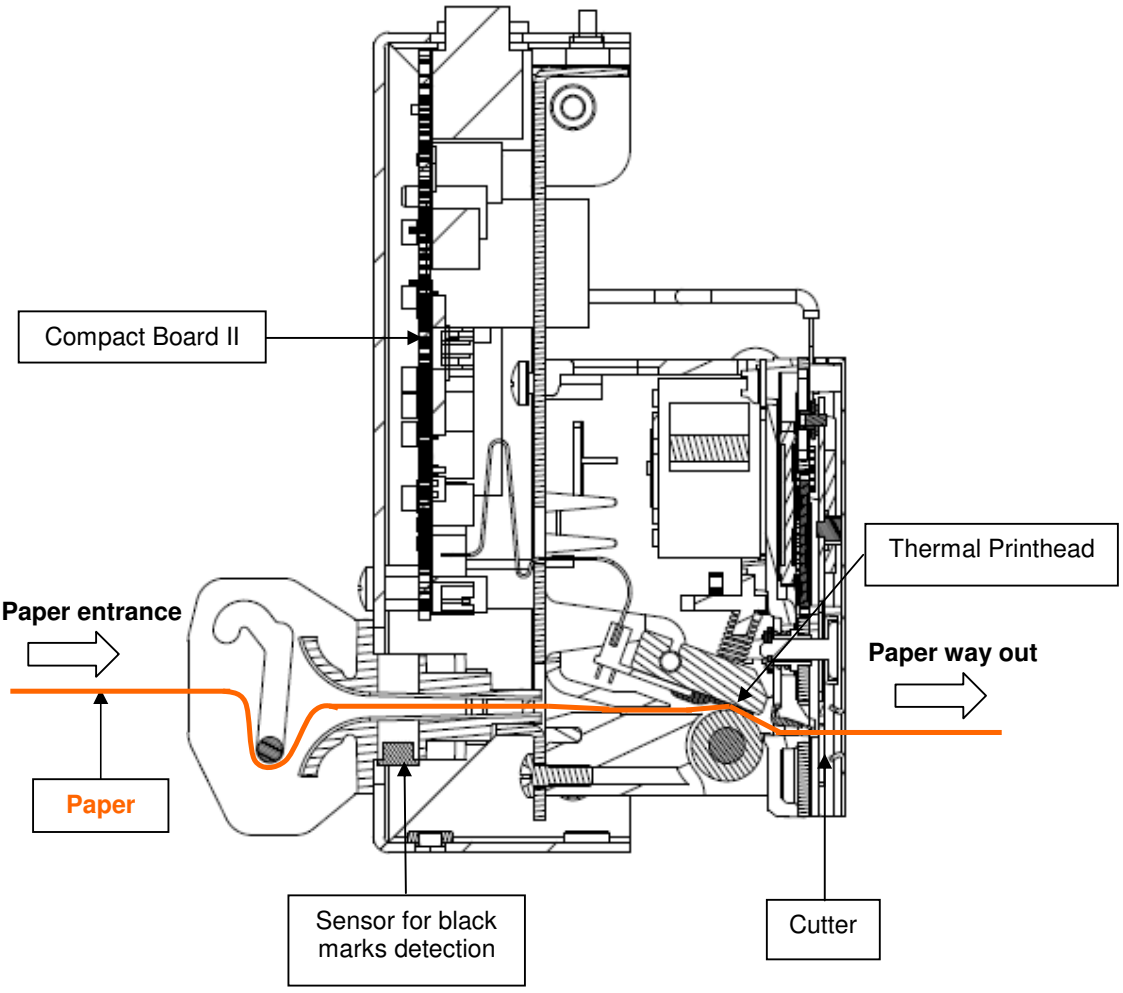
2. MECHANICAL SPECIFICATIONS

2.1. General views

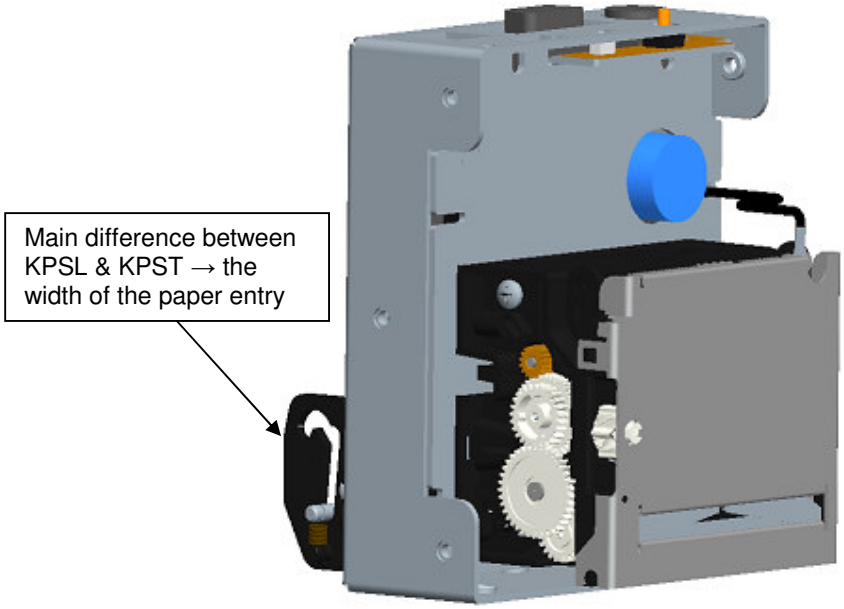

Paper Feed button
JST Connector for near paper end sensor
Damping system
RM Premium mechanism (12 or 24V)
Electronic Board casing

Note: - A paper roll holder can be added as an option for the KPSH → Please refer to Chapter 12 "OPTIONS"

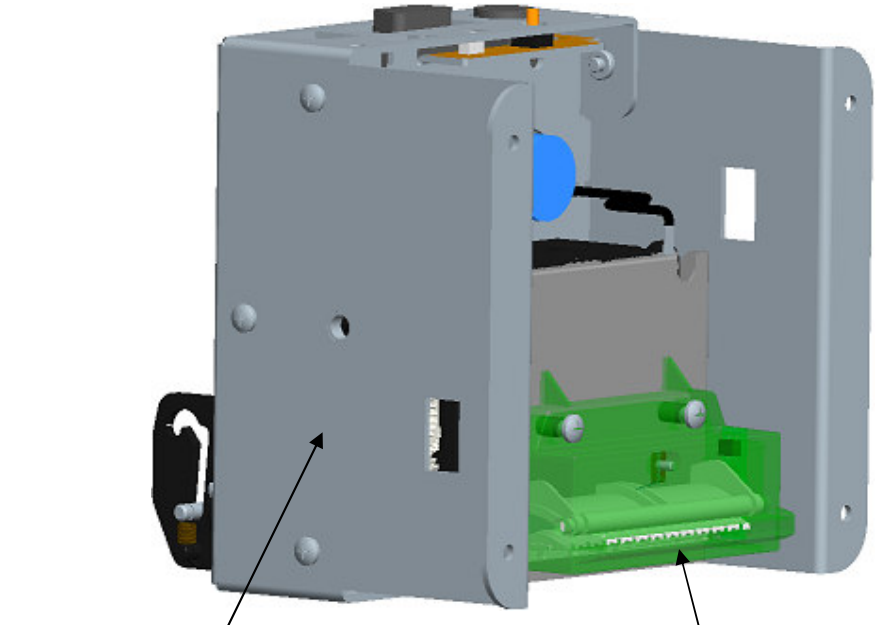
- A Sense & print function can be added as an option for the KPSH → Please refer to Chapter 12 "OPTIONS"


Compact Board II
Thermal Printhead
Paper entrance
Paper way out
Paper
Sensor for black marks detection
Cutter

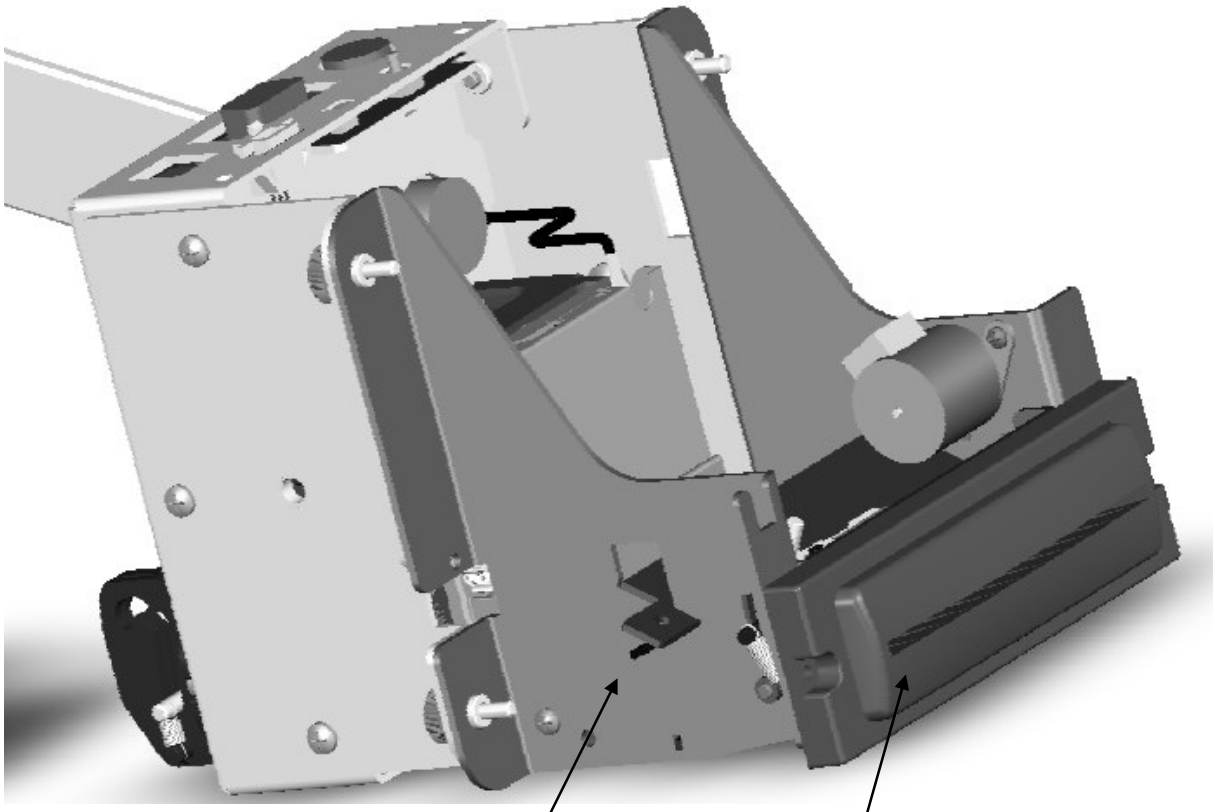
2.2. KPSL & KPST



2.3. KPSH



2.4. KPSP



3. HARDWARE & SOFTWARE SPECIFICATIONS

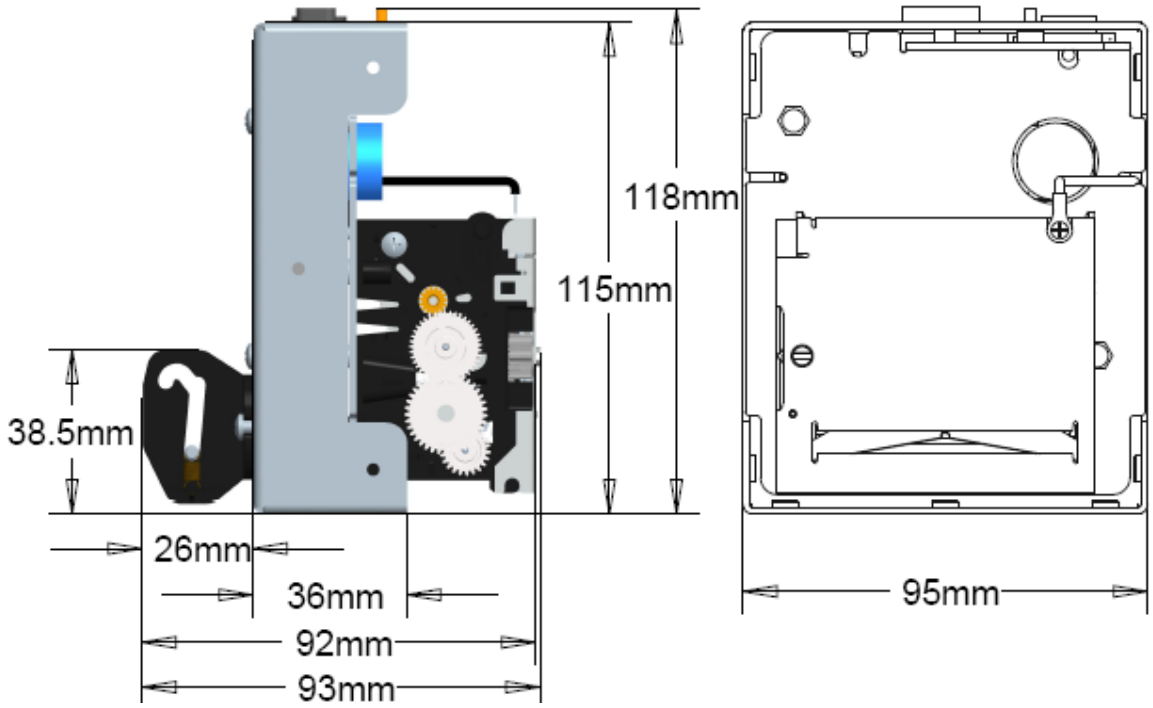
Please refer to the User's manual of the Compact board II for CM/RM (→ Cf. FDE n° **3109883**) to know all the hardware & software specifications of the KPSx kiosks series, such as:

- The general specifications (Hardware & Software)
- The board CM/RM Compact II / KPSx description
- The power supply
- The RS232 parameters
- The USB parameters
- The connectors description
- The print specifications
- The printer configuration
- The self test ticket description
- The list of control codes
- The command description
- The configuration commands

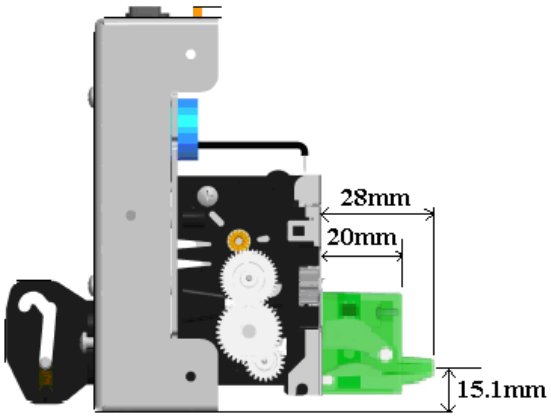
4. OVERALL DIMENSION

Note: All the dimensions of the drawings below are given with an accuracy of **± 0.5 mm**.

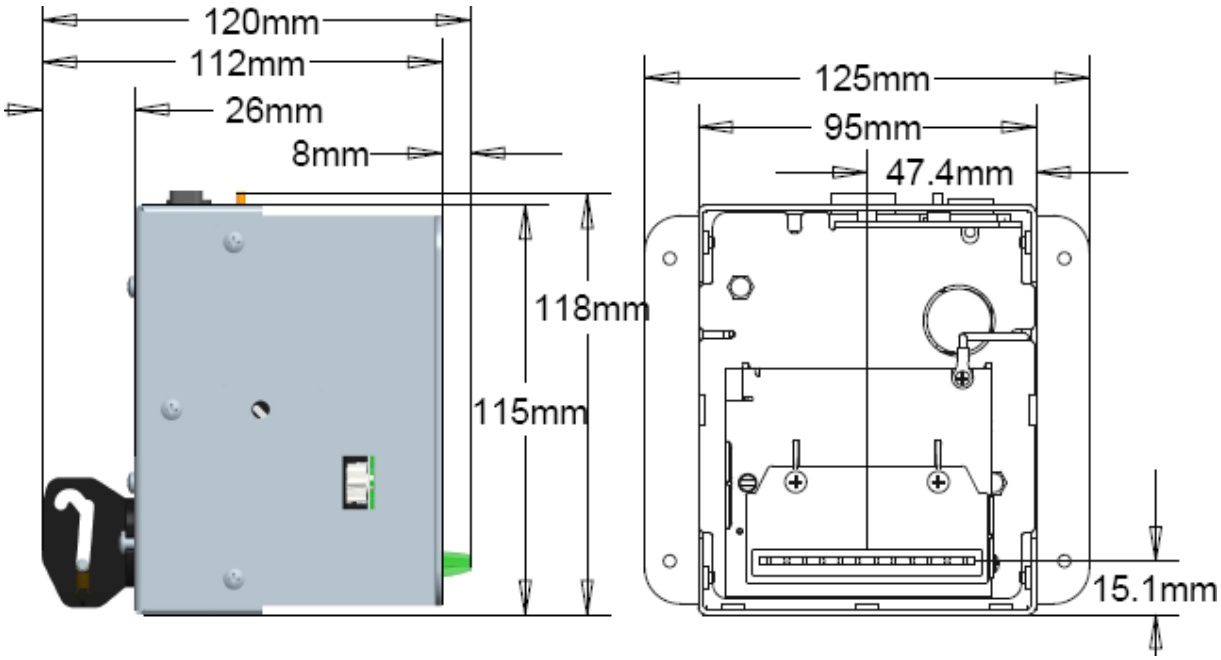
4.1. KPSL & KPST



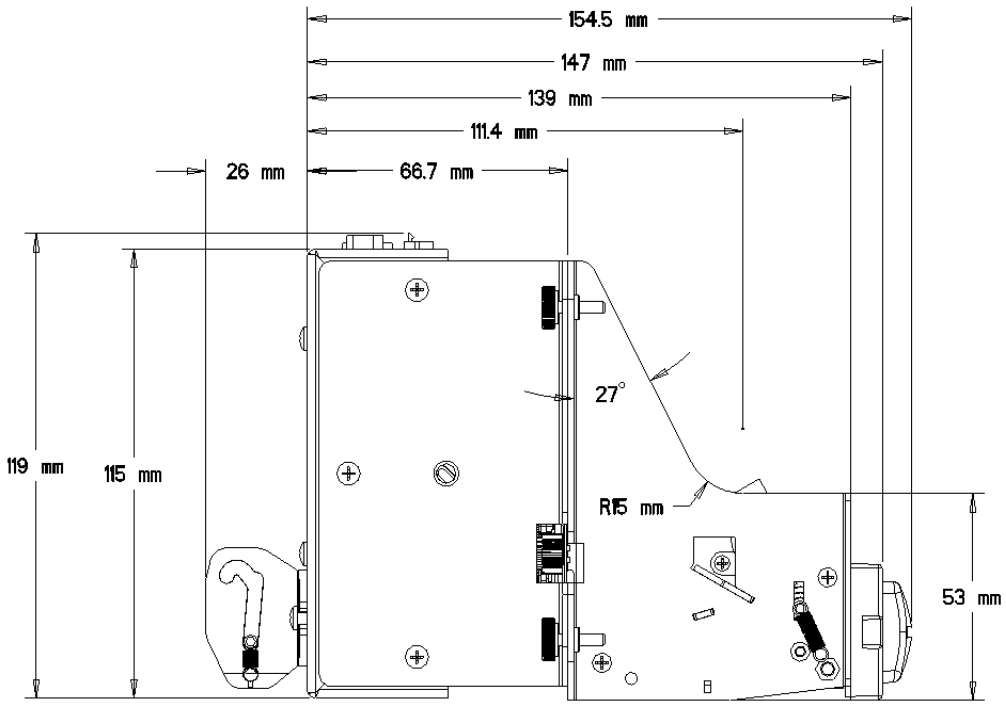
4.2. KPSM

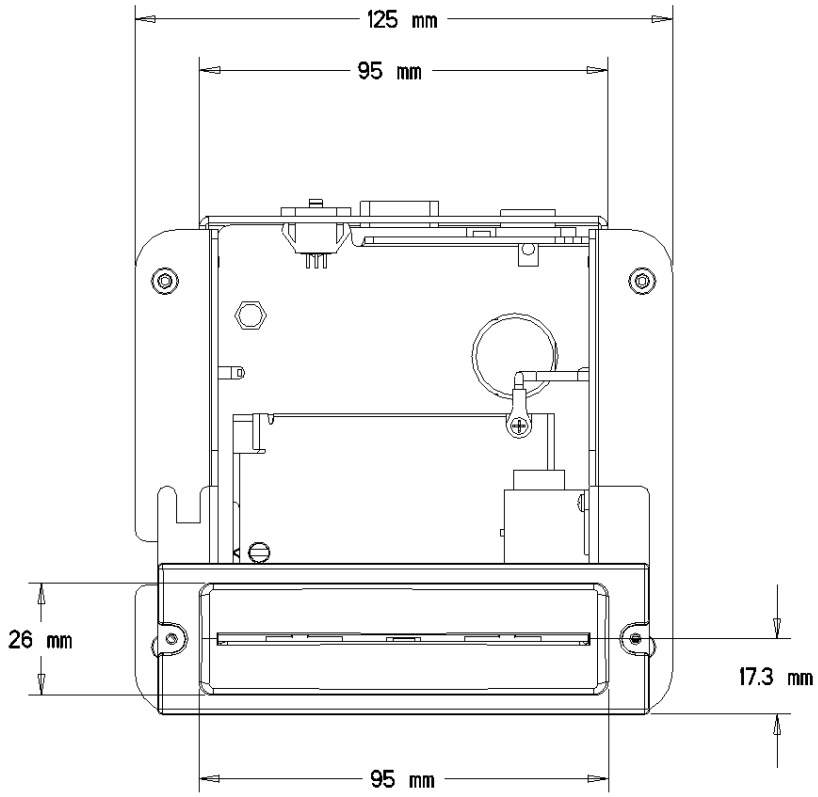


4.3. KPSH



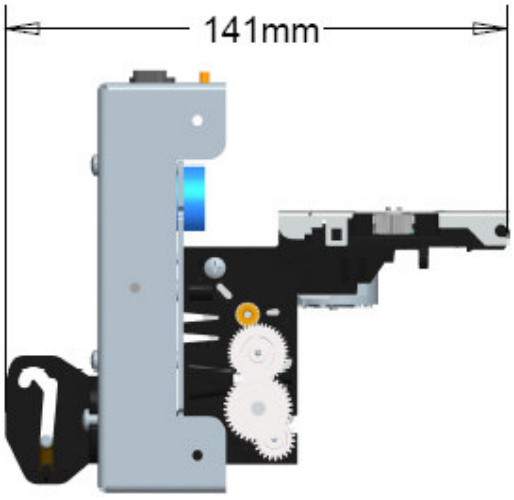
4.4. KPSP



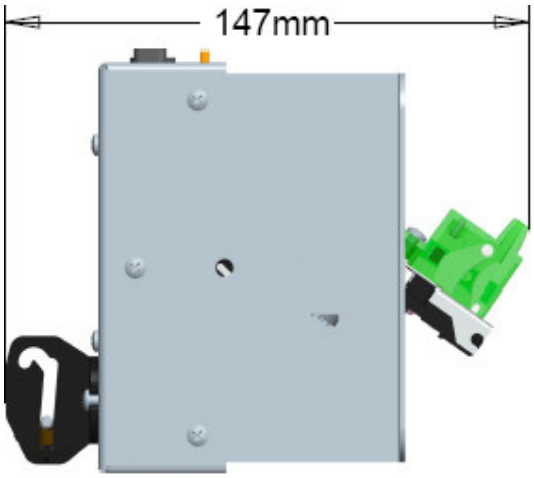


Overall dimension of the kiosk while open

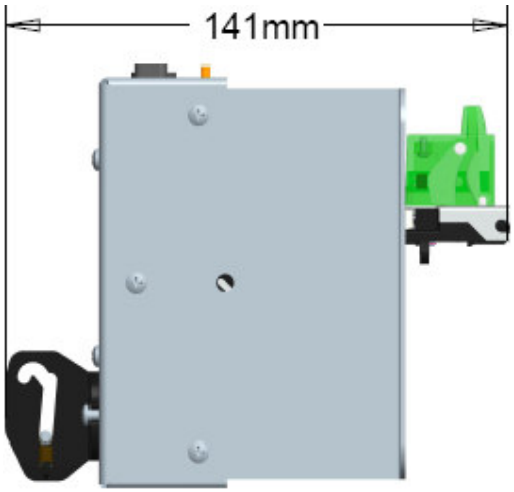
- KPSL& KPST



- KPSH KPSM



Maximum overall dimension of the KPSH while being open



Overall dimension of the KPSH while open

- KPSP

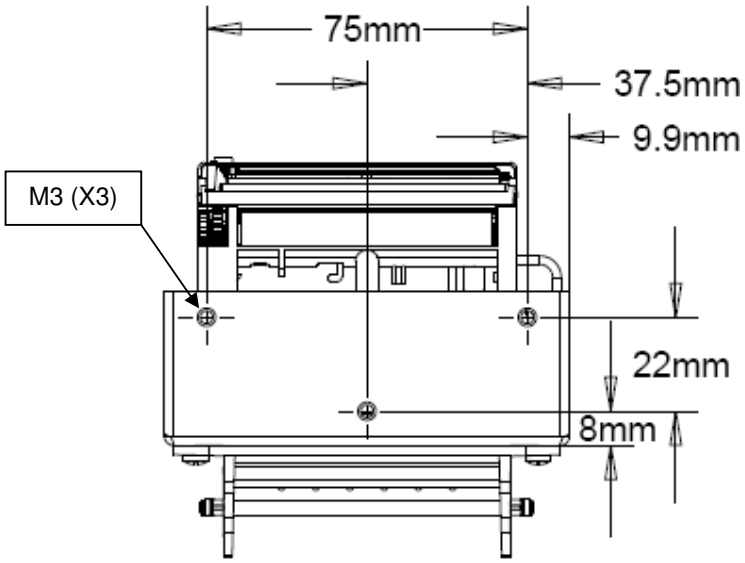
There is no opening movement on the KPSP

5. FIXATION

Note: - All the dimensions of the drawings below are given with an accuracy of **± 0.2 mm unless otherwise specified**.
- All the screws required are **metric** ones.
- Refer to the chapter 3 “OVERALL DIMENSION” if other dimensions are needed.
- The recommended tightening torque is not available yet: Contact Axiohm, if needed.

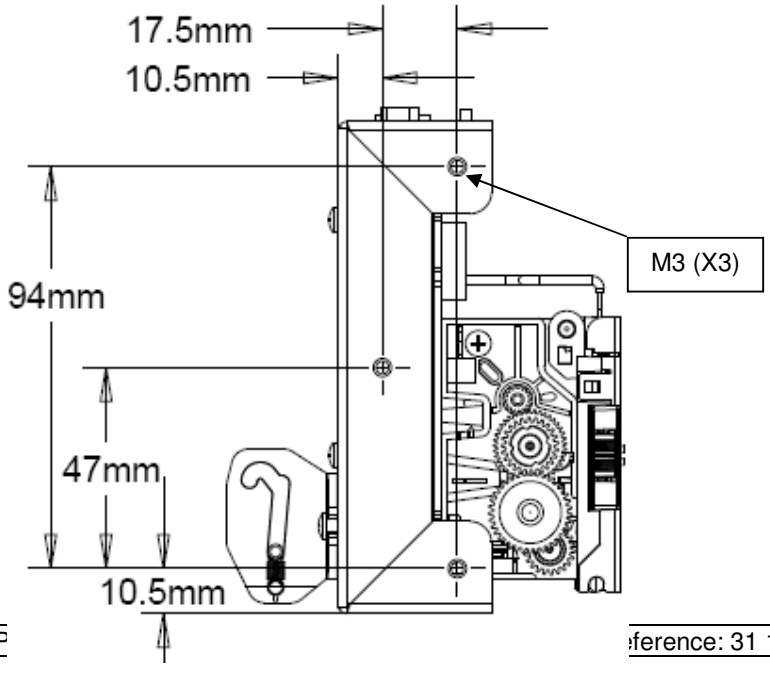
5.1. Bottom side fixation

The printer (KPSL, KPSH, KPST or KPSP) can be fixed by its bottom side by using 3 screws M3. The maximum length of engagement of these screws into the KPSX must not exceed 6mm.



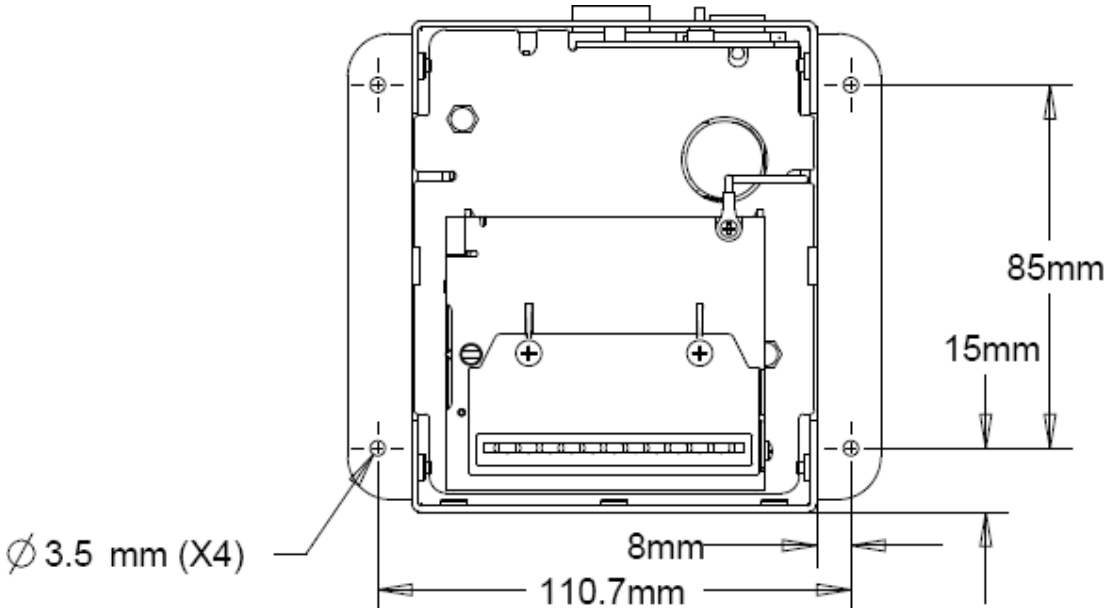
5.2. Side fixation for the KPSL, KPST KPSM only

Both KPSL and KPST can be fixed by its left or right side, thanks to 3 M3 screws.



5.3. Front panel mounting fixation for the KPSH only

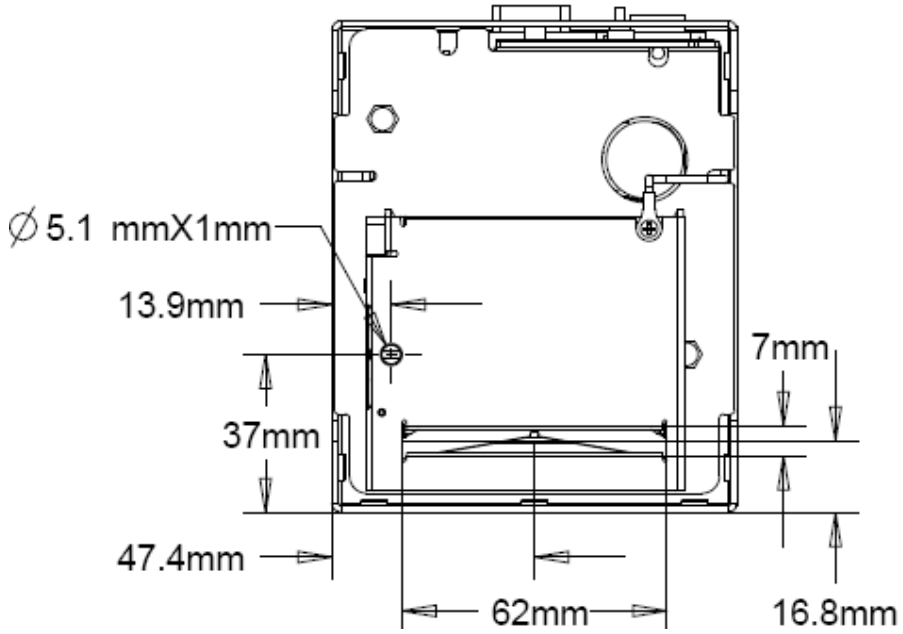
The KPSH can be fixed by its front face, thanks to 4 M3 screws, which must be bolted into the customer environment.



5.4. Compatibility between the paper outlet of the KPSL / KPST and the customer environment

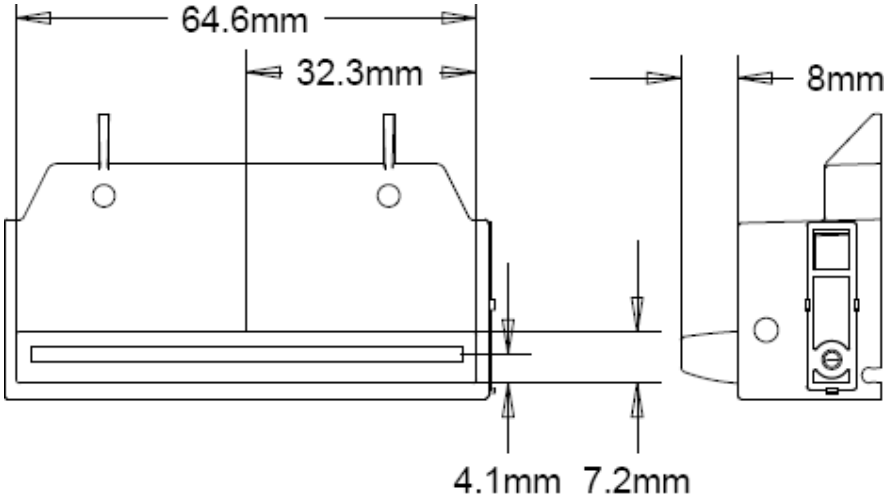
Several elements must be taken into consideration while clamping the KPSL / KPST in a customer environment such as:

- A cylindrical recess (recommended dimensions: Ø5.5mm ±0.1 X 1.5mm ±0.1) or a through hole (recommended dimensions: Ø5.5mm ±0.1) for a wheel system which access can be needed in case of cutter jam
- A cut-out for the paper path with appropriate dimensions (recommended dimensions: L = 62mm +0/-0.5 X W = 7mm +0/-0.5)

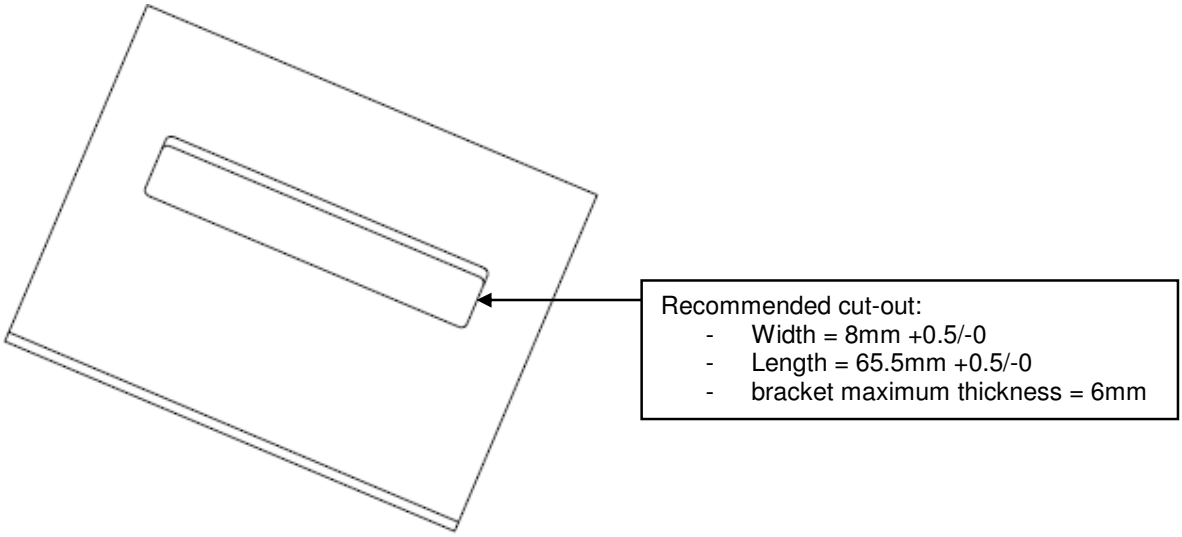


5.5. Cut-out required for the KPSH only

5.5.1. Bezel overall dimension



5.5.2. Dimensions of the recommended cut-out

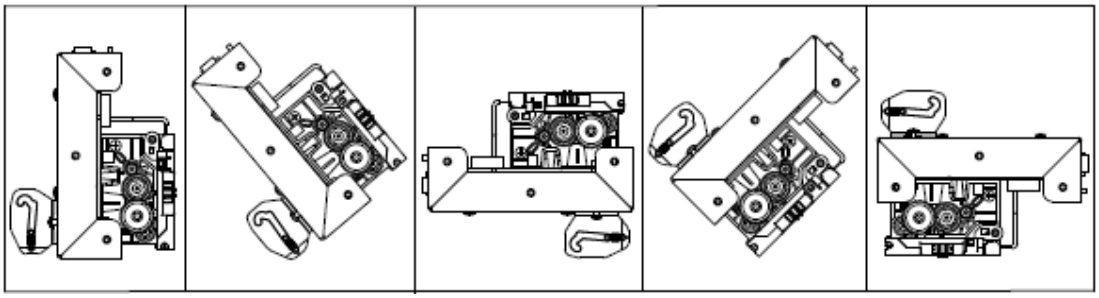


5.6. Cut-out required for the KPSP with bezel

Rectangular dimensions:
Width = 27 mm +0.5/-0
Length = 96 mm +0.5/-0

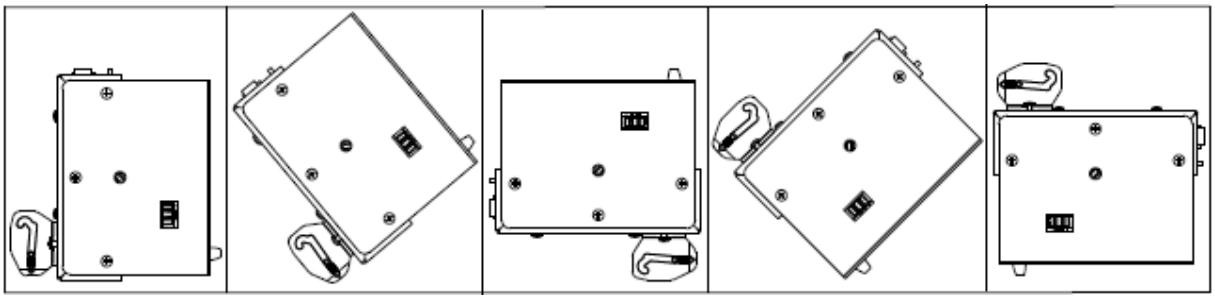
6. ORIENTATION POSITIONS

6.1. KPSL, KPSM & KPST possible positions



POSSIBLE POSSIBLE POSSIBLE POSSIBLE POSSIBLE

6.2. KPSH & KPSP possible positions



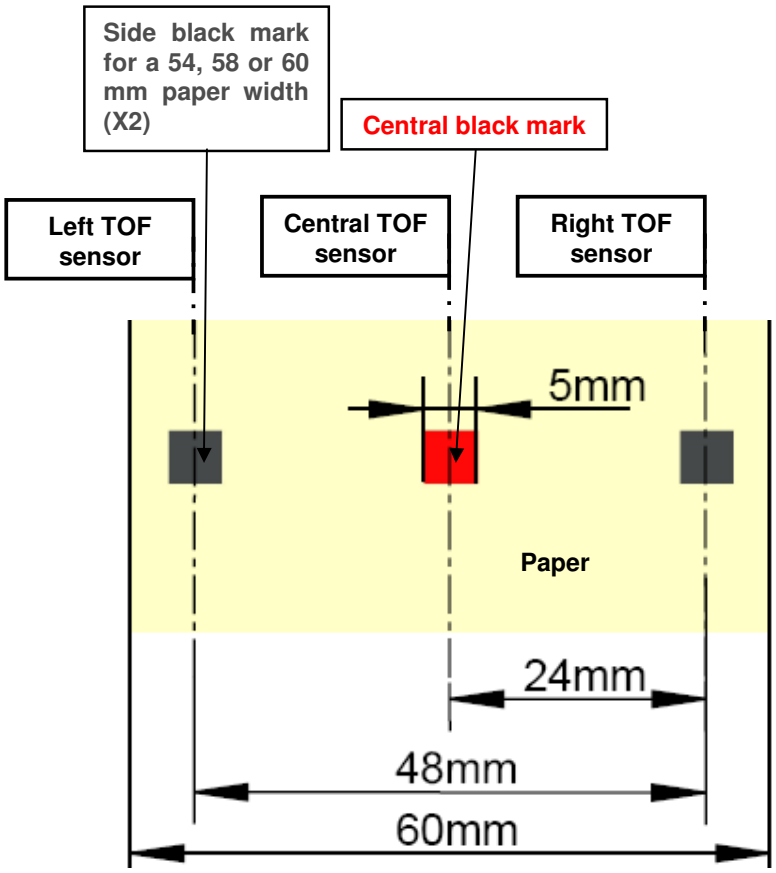
POSSIBLE POSSIBLE POSSIBLE POSSIBLE POSSIBLE

7. POSITION OF THE PRINTER SENSORS

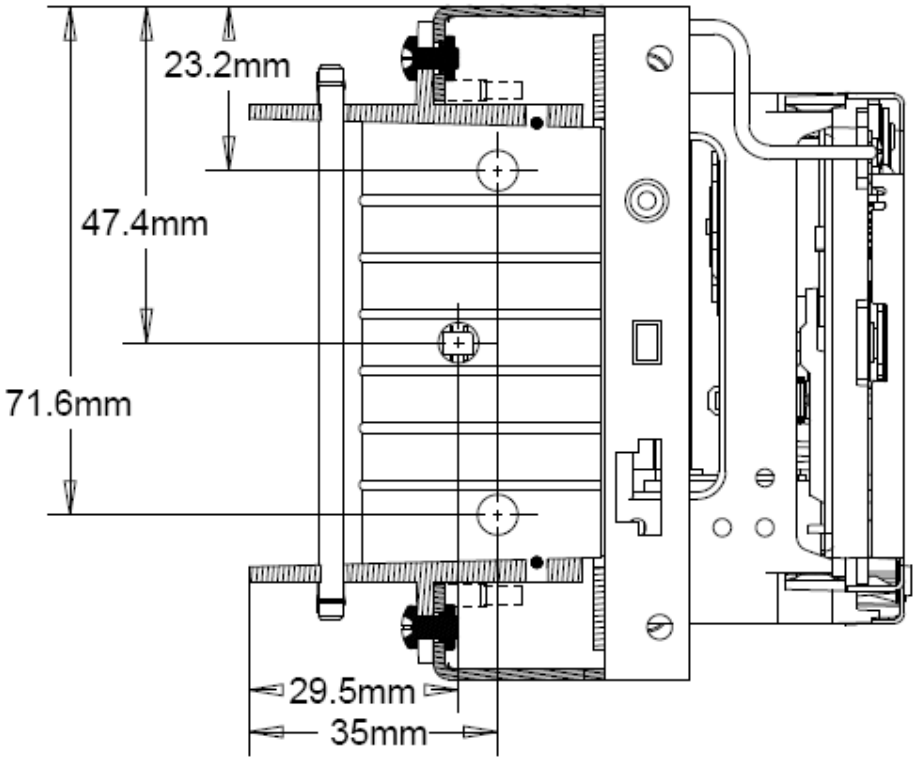
Note: All the dimensions of the drawings below are given with an accuracy of **± 0.2 mm**.

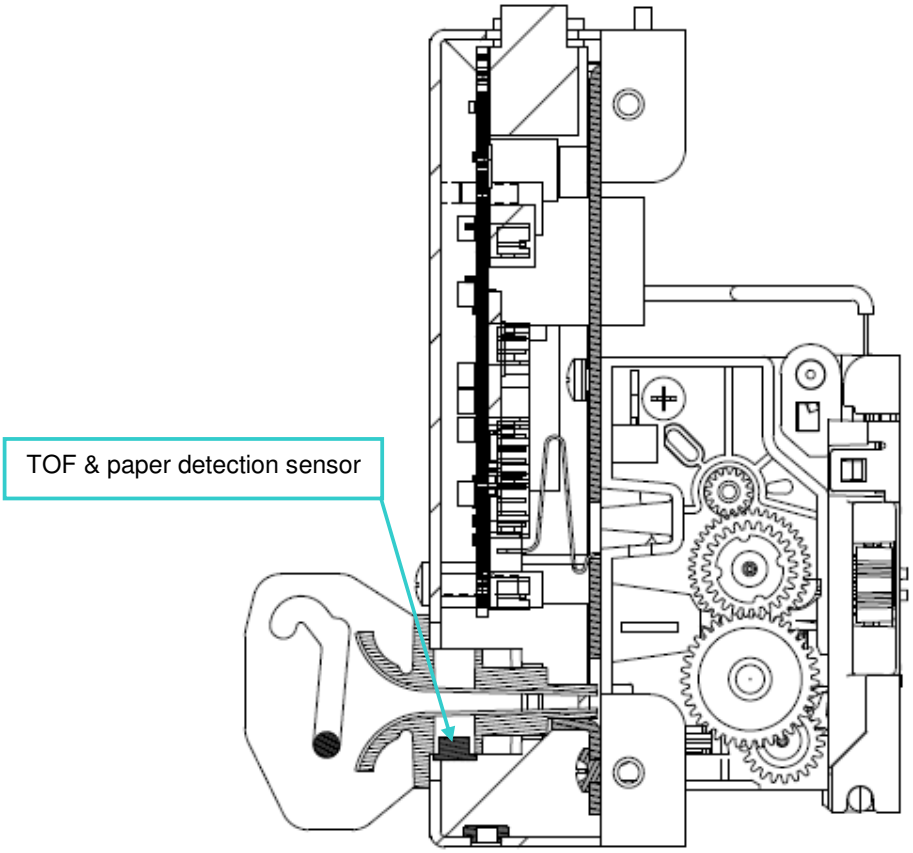
7.1. BLACK MARKS POSITIONS

The black marks can be located on each tip of the paper width (1 or 2 side black marks) and/or in its centre (1 central black mark).
The width of each black mark must not exceed 15mm (recommended width & length for a black mark: 5mm → cf. drawing below).

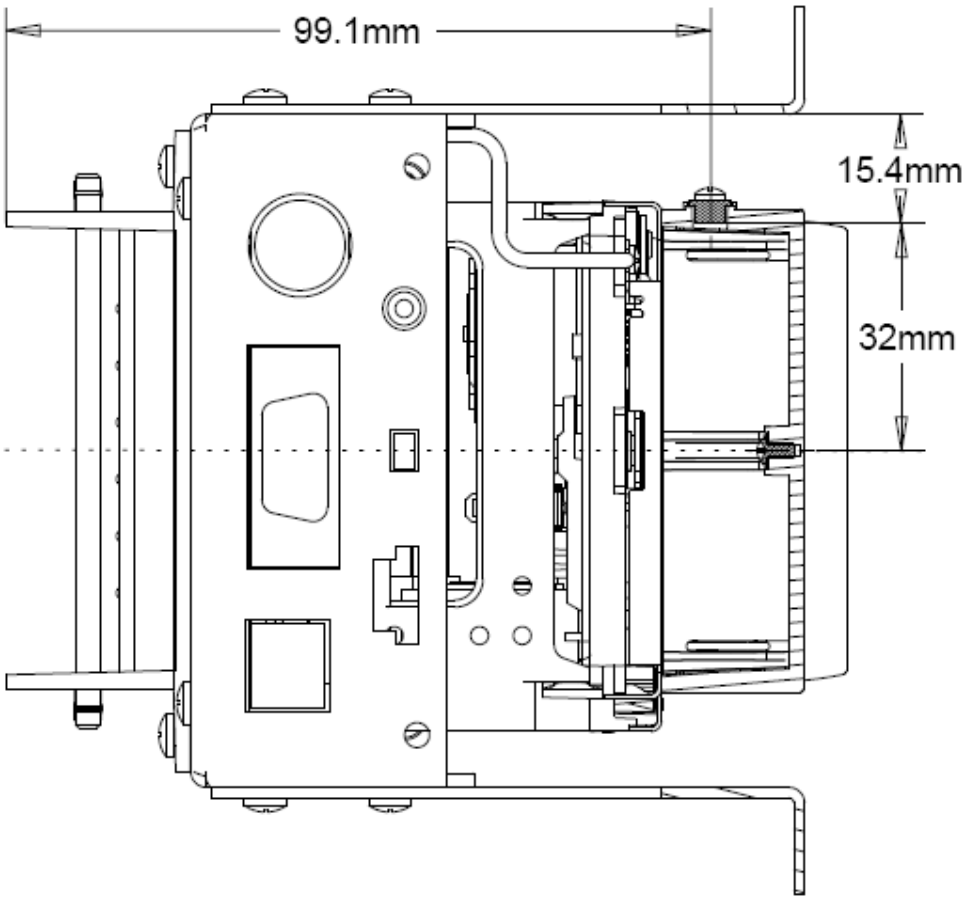


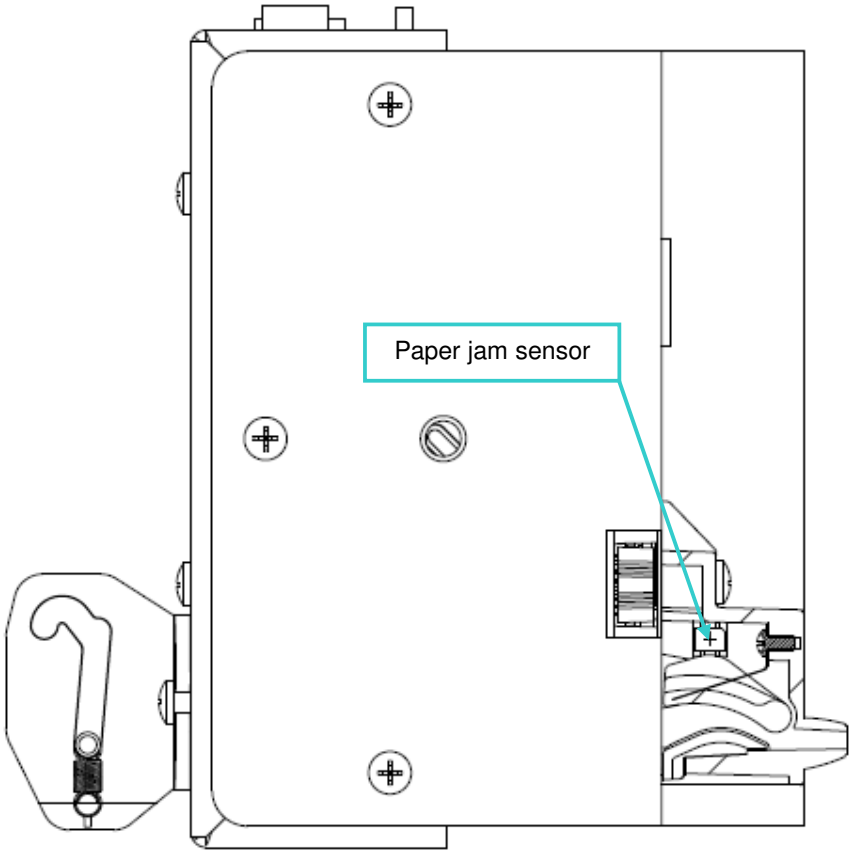
7.2. BLACK MARKS DETECTION (TOF) & PAPER DETECTION SENSOR





7.3. PAPER JAM SENSOR FOR KPSH & KPSM ONLY

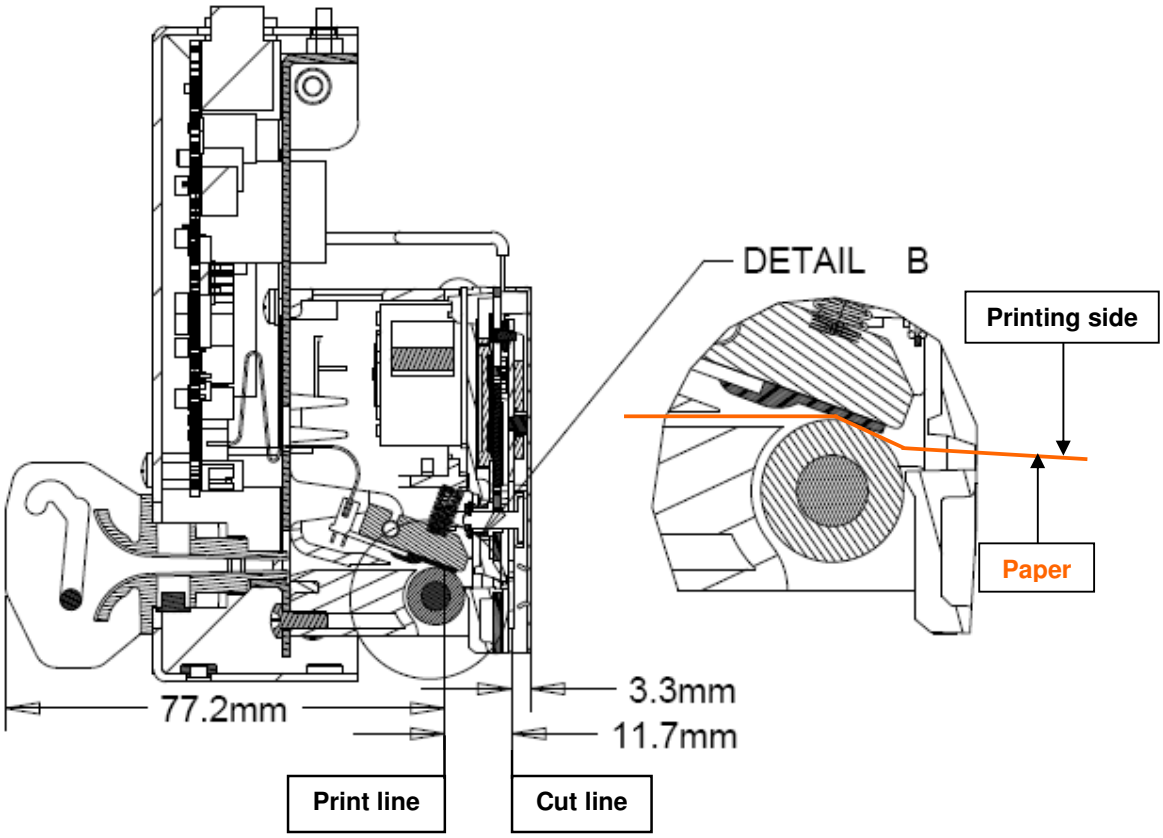




8. PRINTING

Note: All the dimensions of the drawings below are given with an accuracy of **± 0.5 mm**.

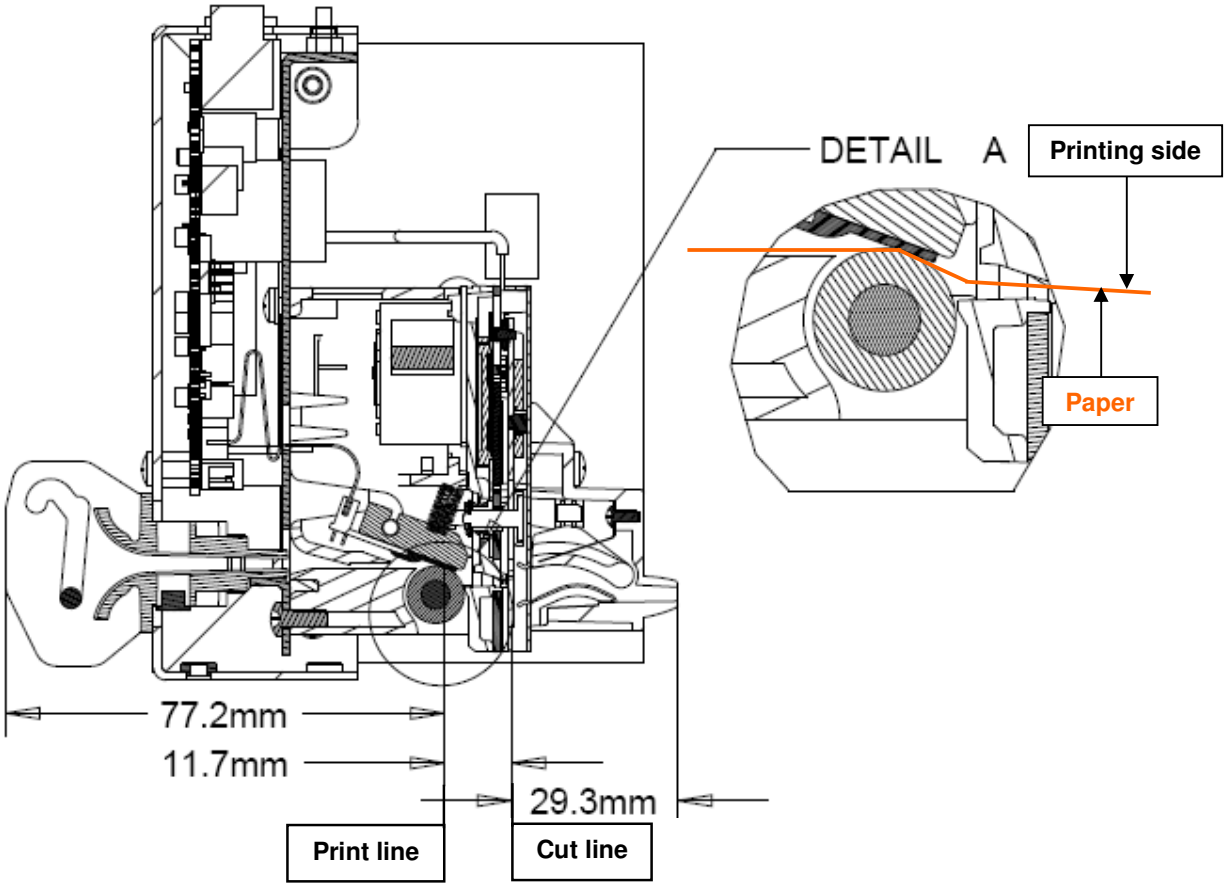
8.1. KPSL & KPST



The distance between the print line and the cut line is about 11,7mm.
The maximum paper reverse feeding is 8mm.
The KPSL has a 56mm maximum printing width whereas the KPST has a 52mm maximum printing width.

The minimum length of a ticket is 25mm for the KPSL & KPST.

8.2. KPSH & KPSP



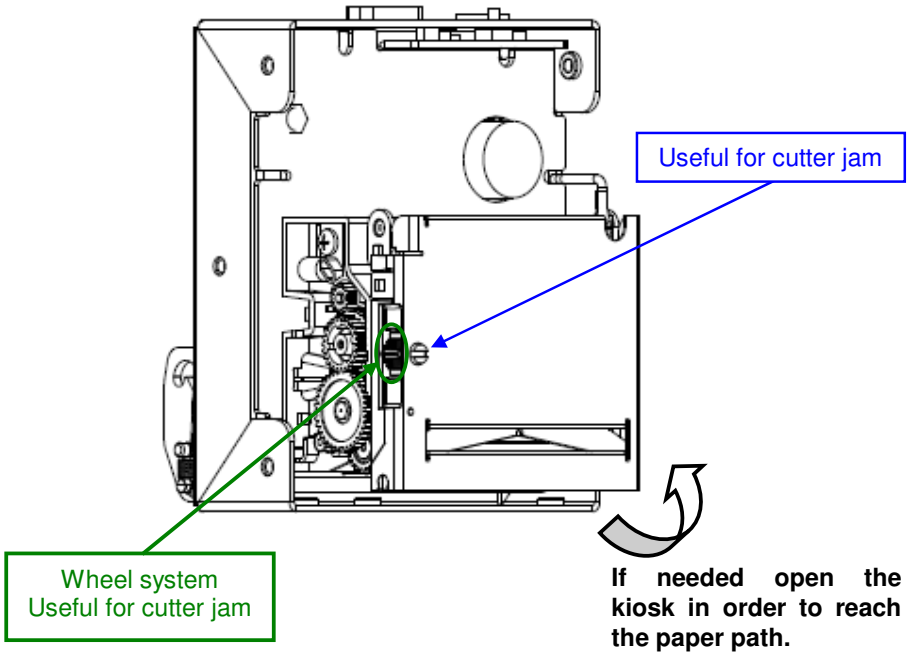
The distance between the print line and the cut line is about 11,7mm.
The maximum paper reverse feeding is 8mm.
The KPSH has a 56mm maximum printing width.

The minimum length of a ticket is 55mm for the KPSH.

The minimum length of a ticket is 90 mm for the KPSP (without bezel).

9. CUTTER AND PAPER JAM

9.1. KPSL & KPST



9.1.1. Cutter jam

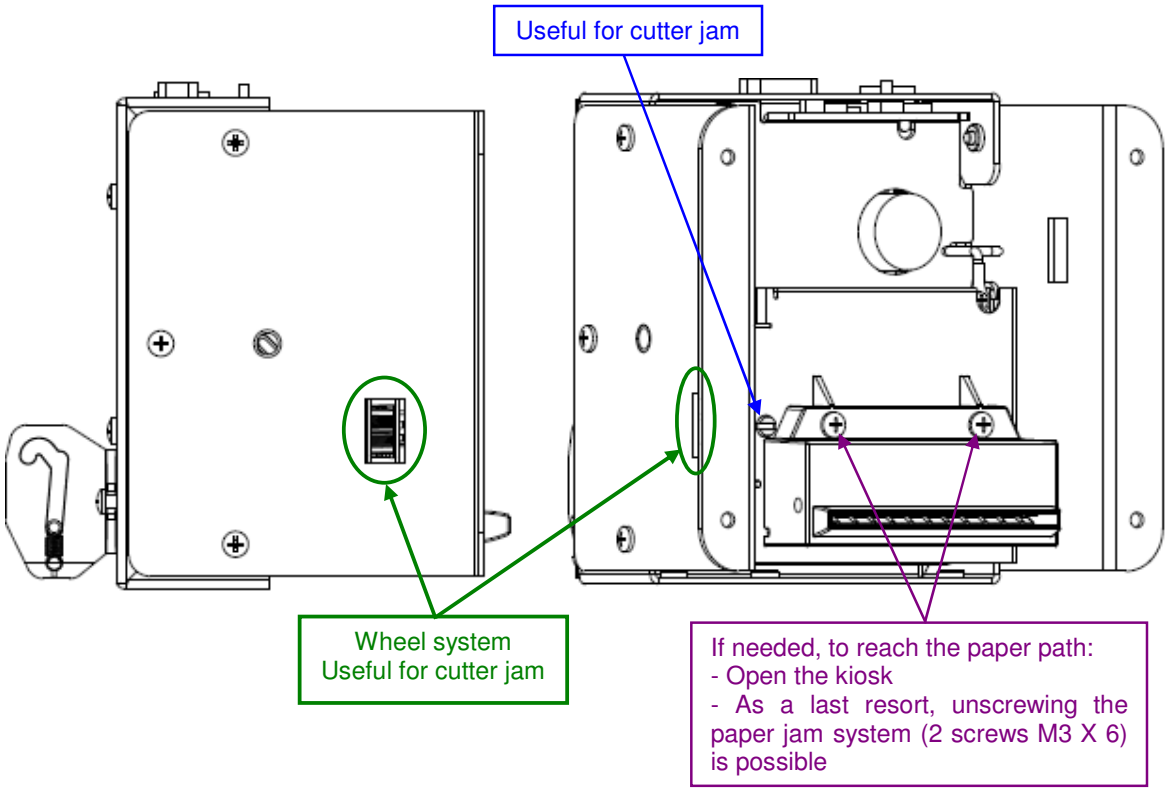
In case of cutter jam, there are 2 possible ways to solve the issue:

- Thanks to a wheel system, which is easily accessible on the kiosk right side
- By using a flat blade screwdriver in the groove of the cylindrical shape located on the front side of the kiosk

9.1.2. Paper jam

In case of paper jam, the only way to solve the issue consists in discharging the paper and feed it back. Do not hesitate to open the kiosk to check that no paper scrap remains jammed into the paper path before feeding it back.

9.2. KPSH & KPSP


Useful for cutter jam
Wheel system
Useful for cutter jam
If needed, to reach the paper path:
- Open the kiosk
- As a last resort, unscrewing the paper jam system (2 screws M3 X 6) is possible

9.2.1. Cutter jam

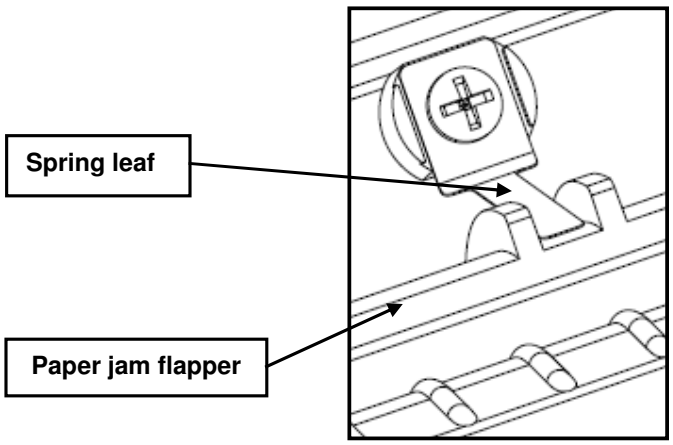
In case of cutter jam, there are 2 possible ways to solve the issue:

- Thanks to a wheel system, which is easily accessible on the kiosk left side
- By using a flat blade screwdriver in the groove of the cylindrical shape located on the front side of the kiosk

9.2.2. Paper jam

In case of paper jam, several areas are easily reachable:

- Access to the platen roller and the thermal head: by opening the kiosk
- Access to the paper path at cutter level: by unscrewing the two fixing screws of the paper jam system.

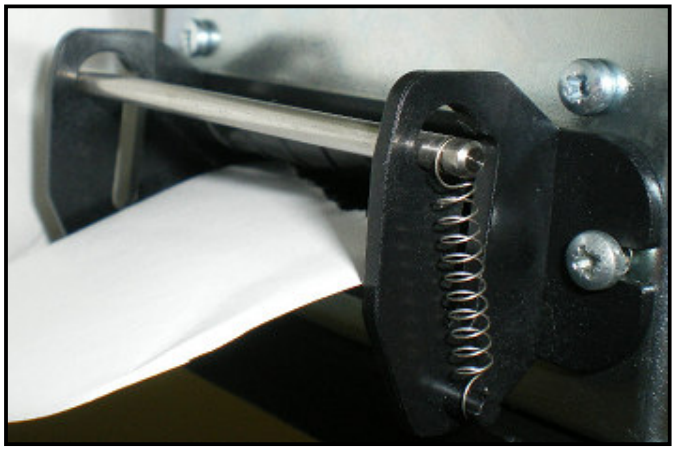


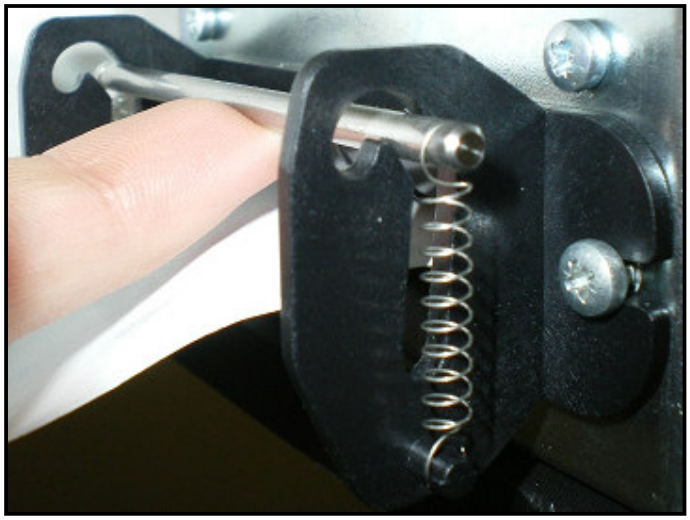
<u>WARNING:</u> Never operate manually the white flapper while unclamping the paper jam system: you may strip the spring leaf.

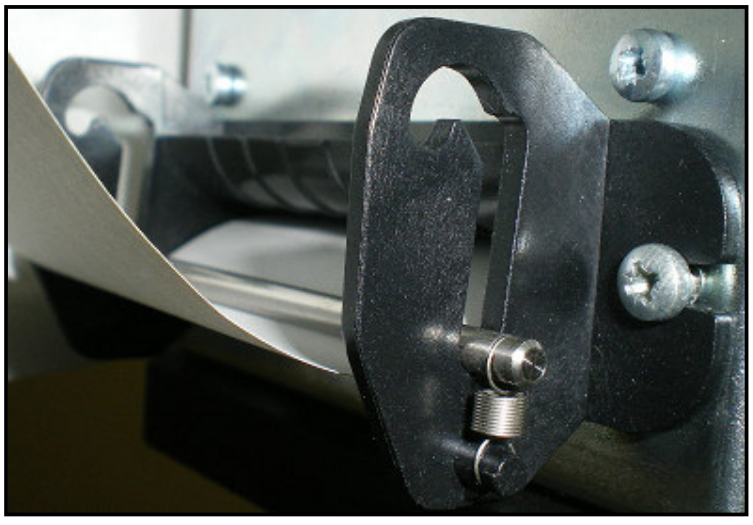
10. DAMPING SYSTEM

The KPSx damping system is required in order to avoid any risk of motor stalling, which involve ticket off-prints.

The metal axis of the damping system can be manually lifted and clamped for an easier paper feeding into the paper entry slot. Check that this metal axis is well reset once the paper fed before any printing tests.



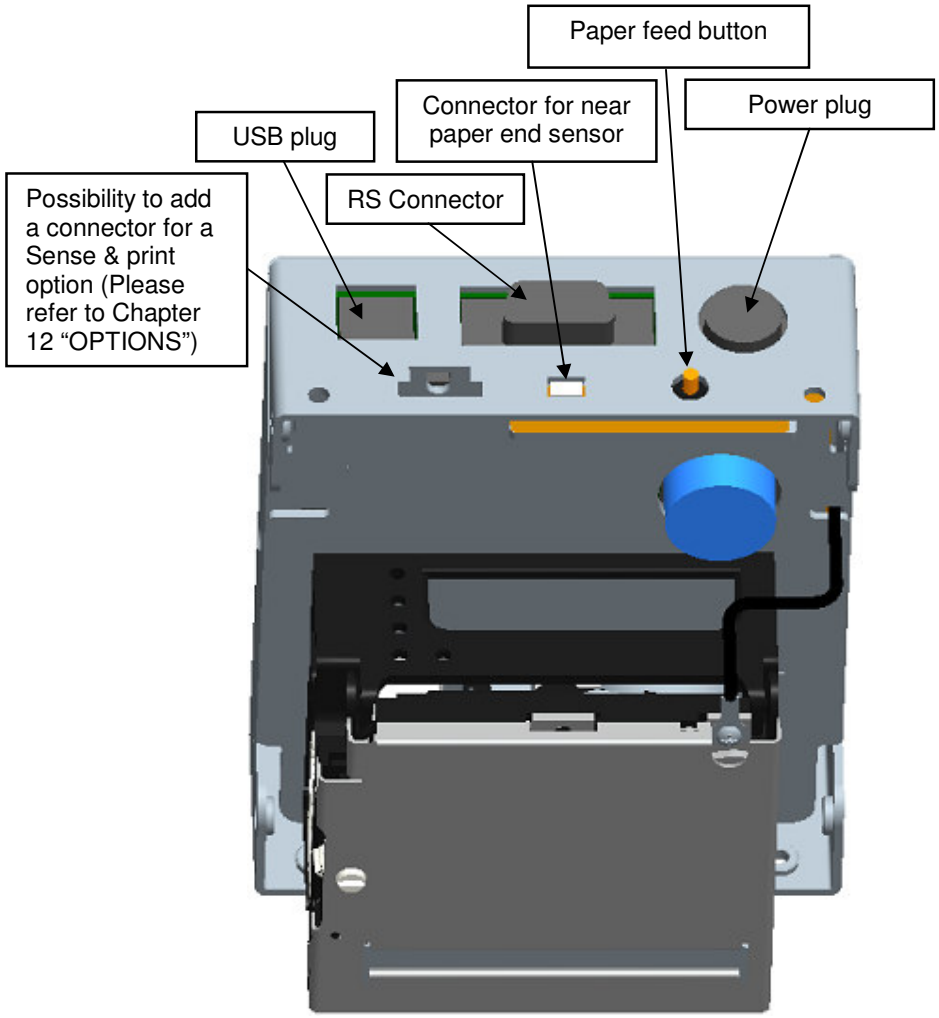




If needed, the damping system is reversible by a simple turning-over from the plastic part.
It is strongly recommended not to reverse by yourself the position of the damping system: Please refer to AXIOHM TXCOM technical support.

11. CONNECTOR TECHNOLOGY

The KPSx connector technology is located on the top of the kiosk.


Paper feed button
Connector for near paper end sensor
Power plug
USB plug
RS Connector
Possibility to add a connector for a Sense & print option (Please refer to Chapter 12 “OPTIONS”)

The paper feed button located on the top of the printer must remain accessible at any time.

12. OPTIONS

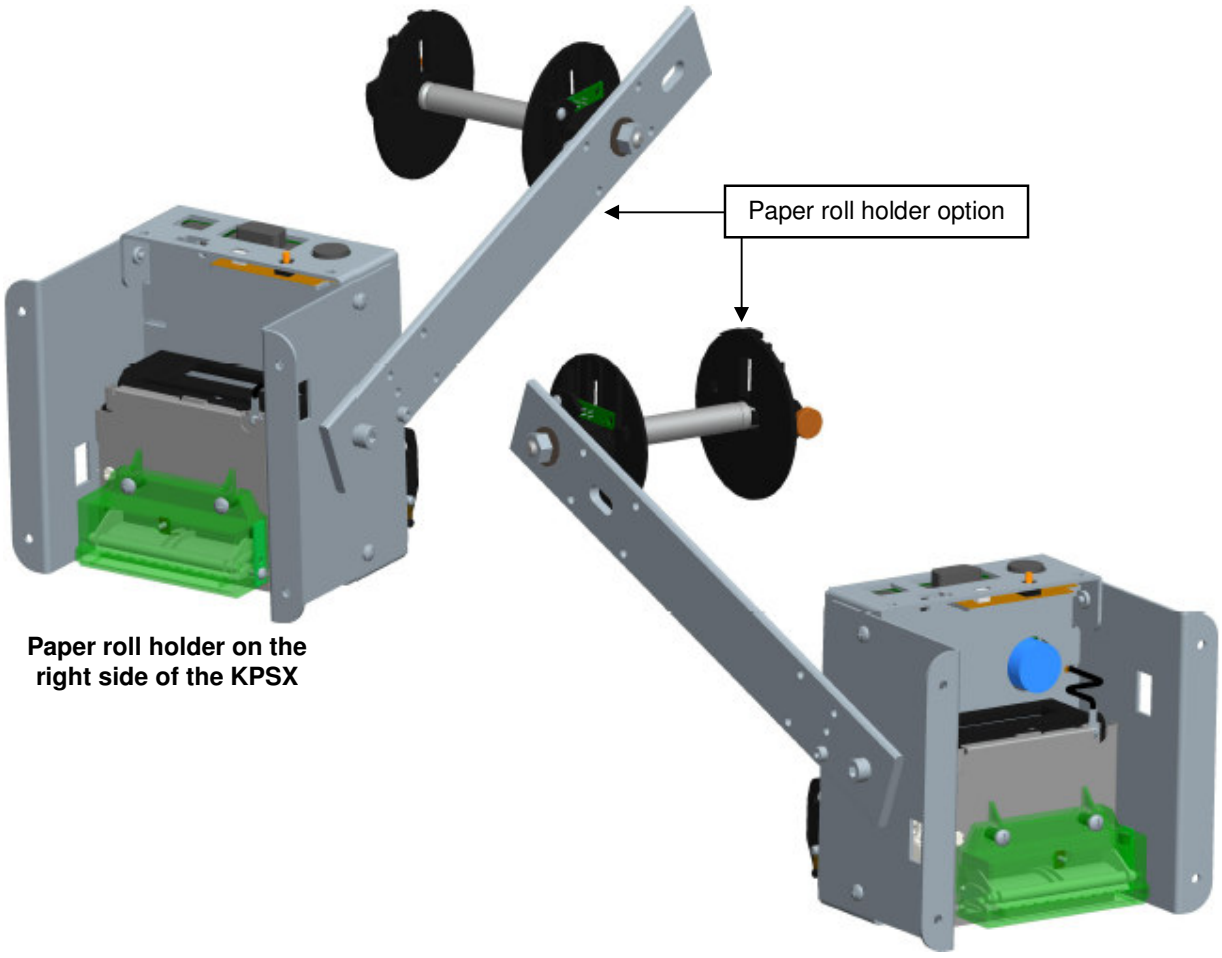
2 options can be added depending on the versions of the kiosk:

- A paper roll holder with a near paper end sensor **for the KPSH & KPSP**
- A sense & print function **for the KPSH only**

Note: All the dimensions of the drawings below are given with an accuracy of **± 0.5 mm & ± 1°**.

12.1. The paper roll holder option for the KPSH & KPSP

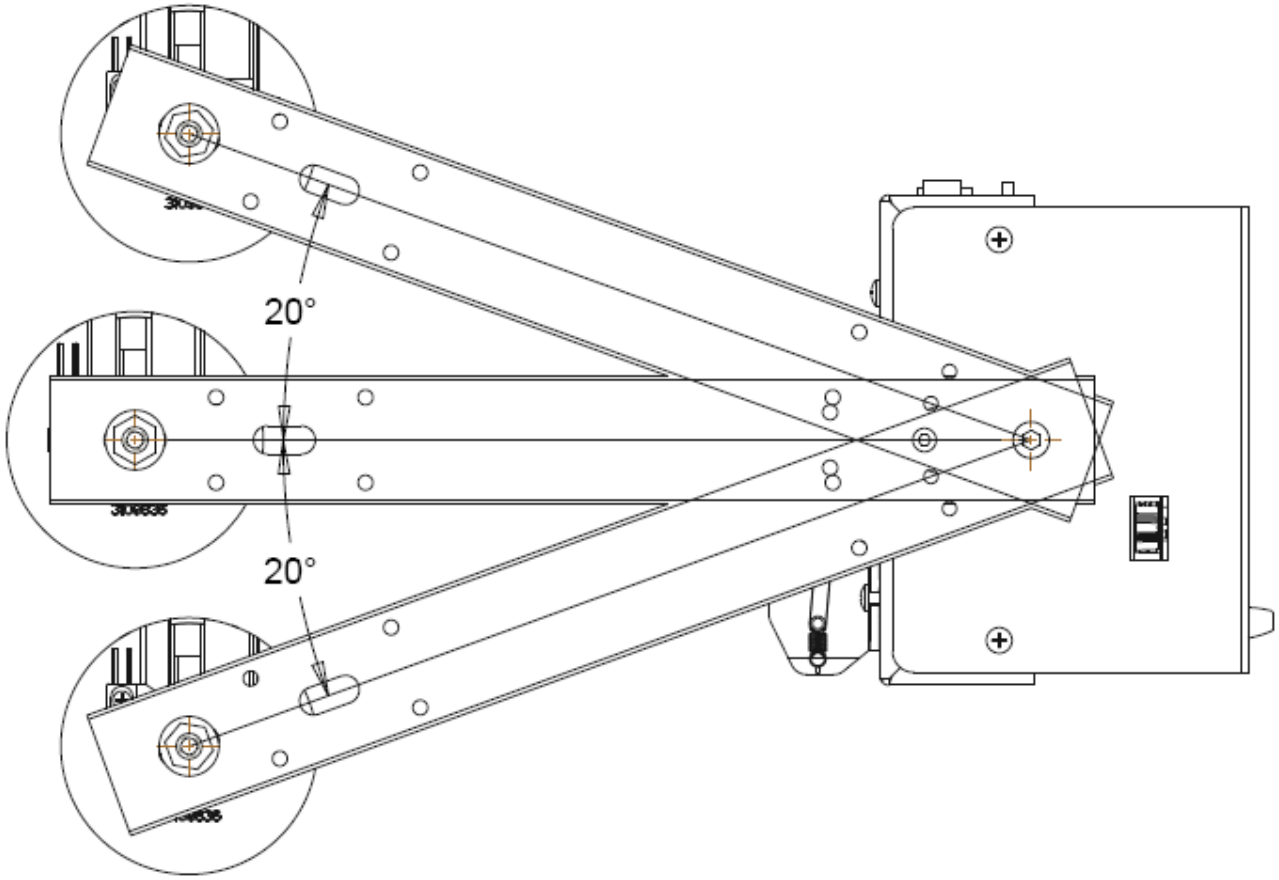
Adding the paper roll holder enables to support different paper roll diameters and different paper roll width (roll diameters included between Ø90 and Ø250mm / paper width: 54mm, 58mm and 60mm). This option can be fixed on the right side or on the left side of the kiosk.



Paper roll holder on the right side of the KPSX

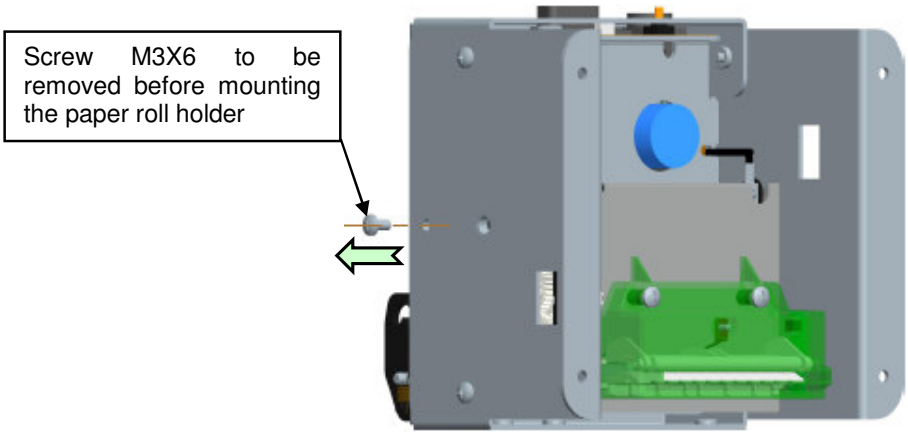
Paper roll holder on the left side of the KPSX

The paper roll holder is angularly adjustable. Indeed, whatever the paper roll diameter is, it can be fixed with a -20°, 0 or 20° angle.

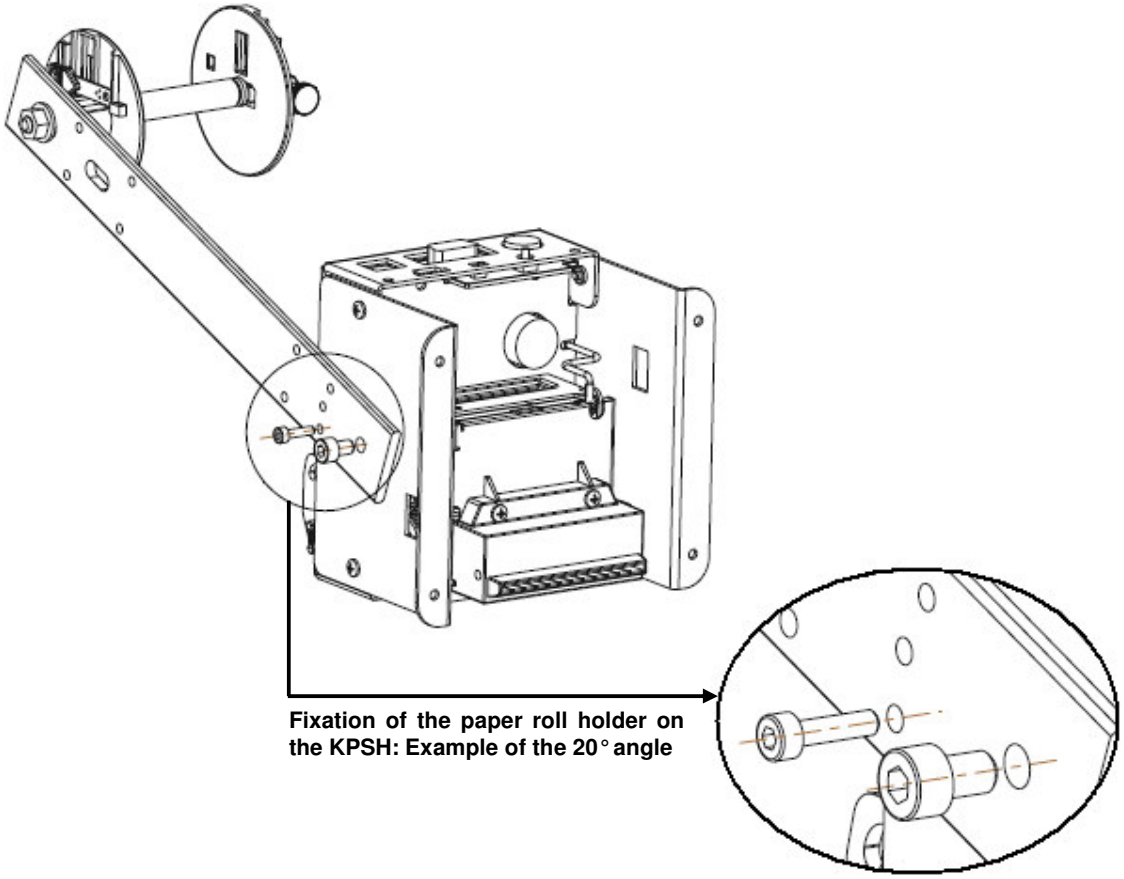

20°
20°

12.1.1. Fixation of the paper roll holder

First of all, the screw M3 X 6 located on the middle of the right / left sheet side part (depending on which side the paper roll holder is mounted) must be removed.



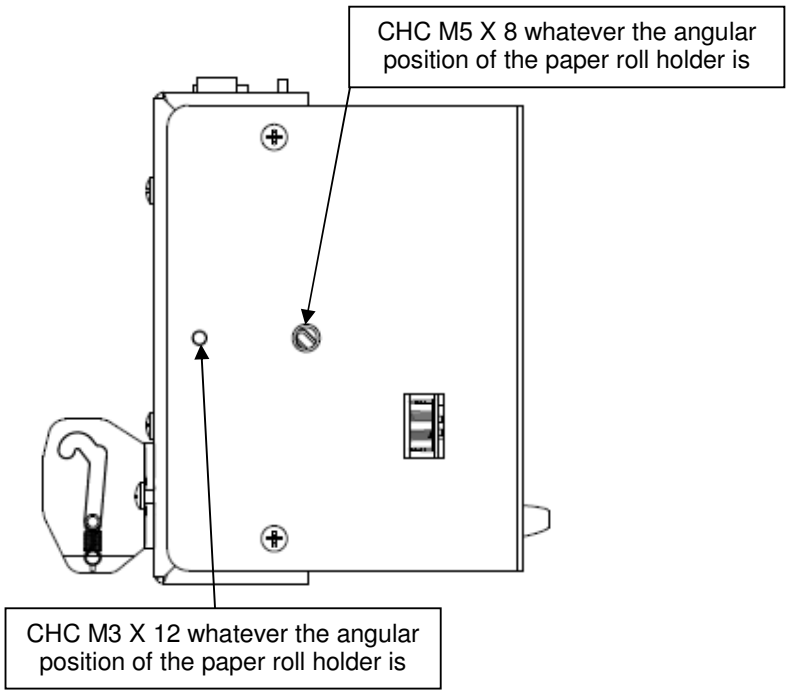
Once in position, the paper roll holder is blocked in rotation thanks to 2 screws (a CHC M5 X 8 screw and a CHC M3 X 12 screw), which must be placed in the corresponding holes. As the central screw M3 X 6 which enables to fix the right / left sheet side part had been removed, it is replaced by a screw CHC M3 X 12 in order to fix the paper roll holder.

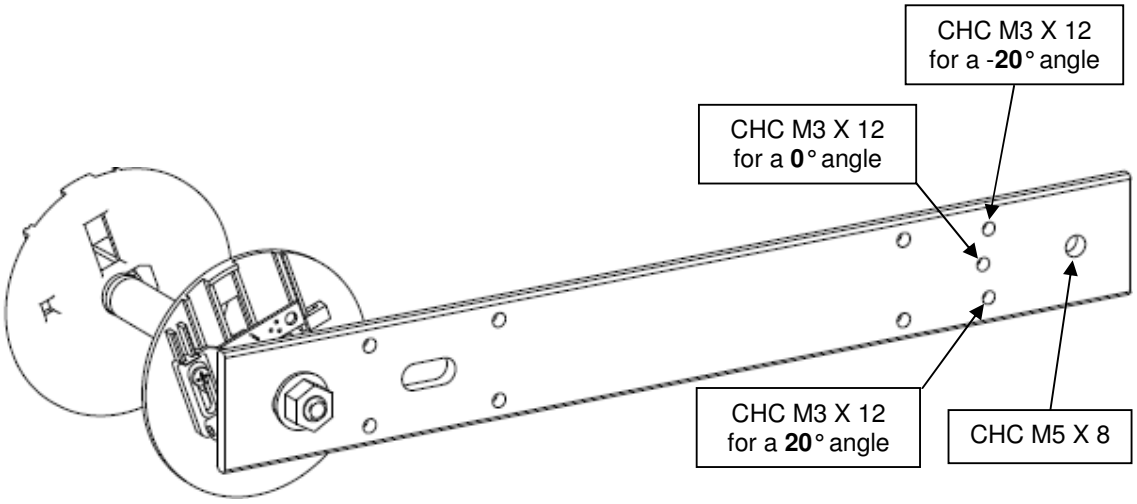


Fixation of the paper roll holder on the KPSH: Example of the 20° angle

These two screws are provided with the paper roll holder.

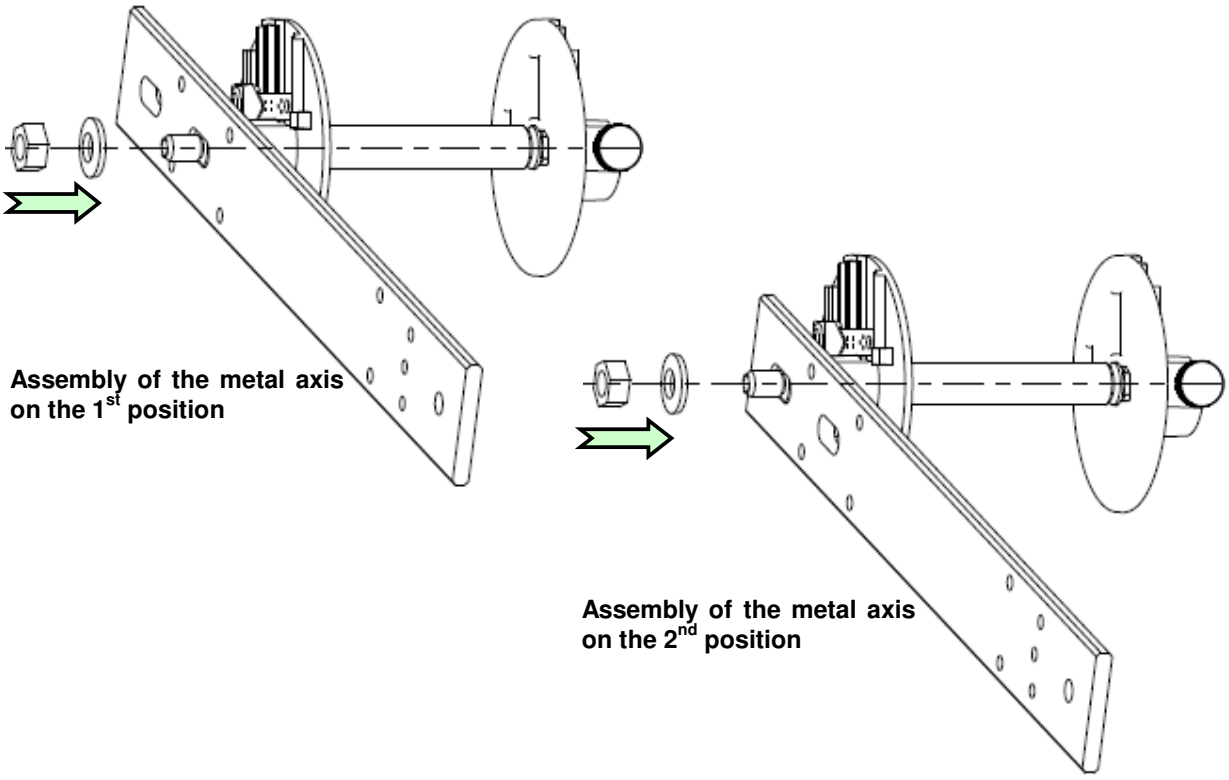
The 2 following draws show the matching between the holes of the paper roll holder and the ones of the left side of the kiosk in order to correctly place the two screws for the 3 different angles.


CHC M5 X 8 whatever the angular position of the paper roll holder is
CHC M3 X 12 whatever the angular position of the paper roll holder is



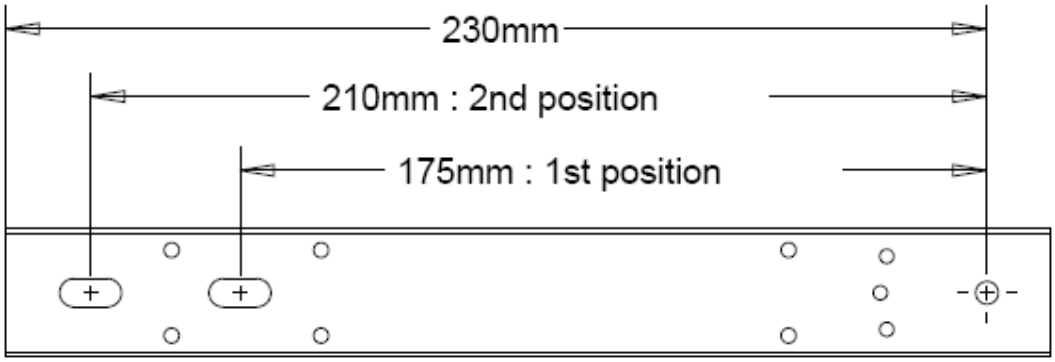
12.1.2. Adjustment basis on the paper roll specifications

The metal axis of the paper roll holder can be fixed on two different positions by using a conical washer and a nut M6. The choice of the position for the metal axis depends directly on the paper roll diameter. The 1st position is recommended when using a small paper roll diameter that is Ø120mm maximum in order to limit the overall dimension of the kiosk. The 2nd position is required for every paper roll diameter that surpasses Ø120mm (maximum diameter: Ø250mm).



Assembly of the metal axis on the 1st position

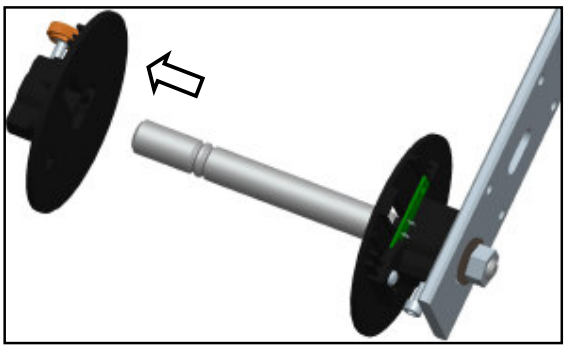
Assembly of the metal axis on the 2nd position



Specifications for each position of the metal axis

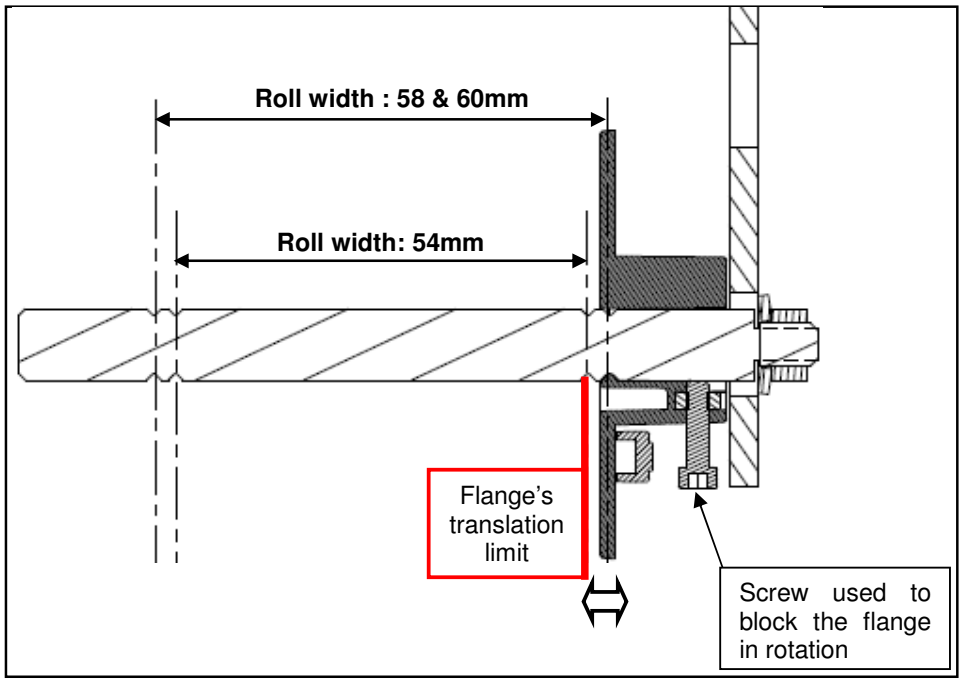
Once the paper roll holder is correctly rigged up, the paper roll must be installed. Please follow the steps below:

1) Remove from the metal axis the outside flange only.

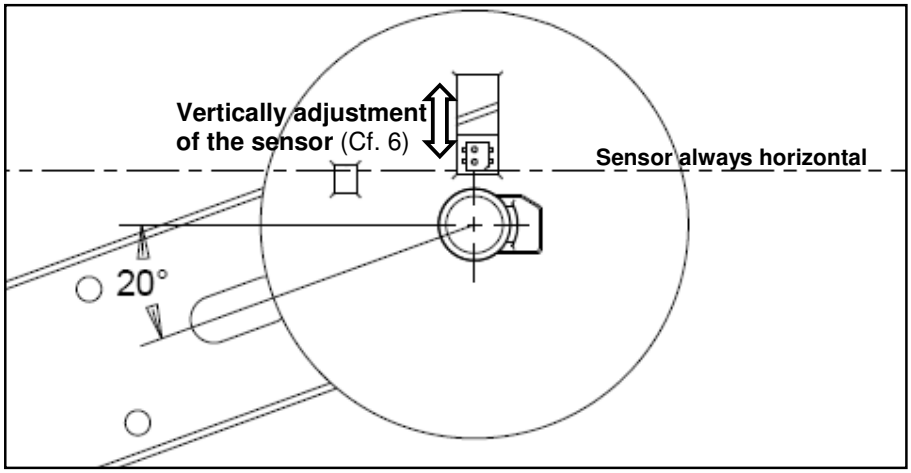


<u>WARNING:</u> The second flange (used as a support for the near paper end sensor) <u>must not</u> be moved beyond the second groove of the metal axis in order to avoid damaging its board and/or its wires.

2) Adjust the second flange position according to the paper roll width. Make sure that it is correctly clipped in one of the two grooves of the metal axis.



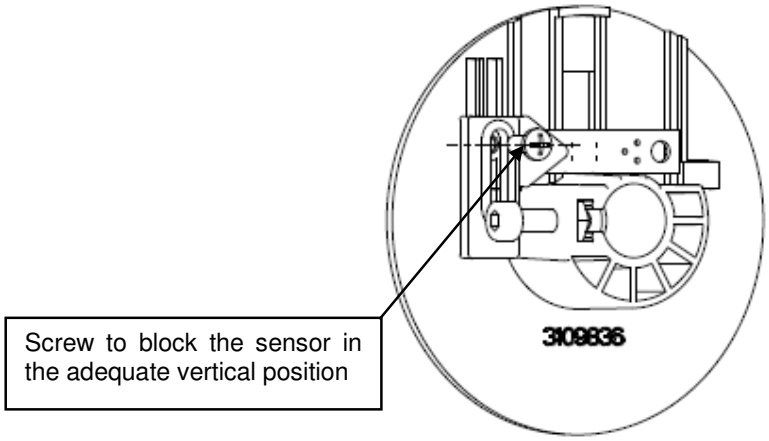
3) Block the second flange in rotation by using the screw while setting up horizontally the near paper end sensor.



4) Insert the paper roll on the axis by taking care of the printing side (Cf. chapter 8 “PRINTING”).

5) Clip the flange which had been removed from the metal axis, and block it in rotation thanks to the screw (→ Cf. 2).

6) Adjust vertically the near paper end sensor according to the paper roll hub thickness, and fix its position by using the screw Ø 2.5 X 6 (→ Cf. 3).



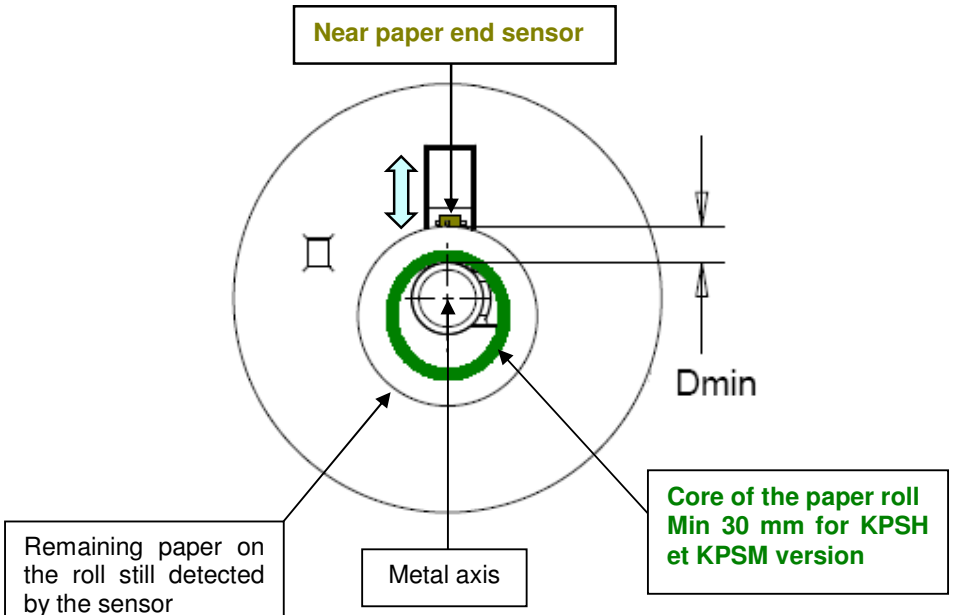
Determination of R_p which is the paper remaining on the core, according to the specifications of the paper roll and to the position of the near paper end sensor:

$$R_P = \frac{\left(\frac{(D\min^2 * \pi - EpM^2 * \pi)}{EpP}\right)}{1000}$$

With:

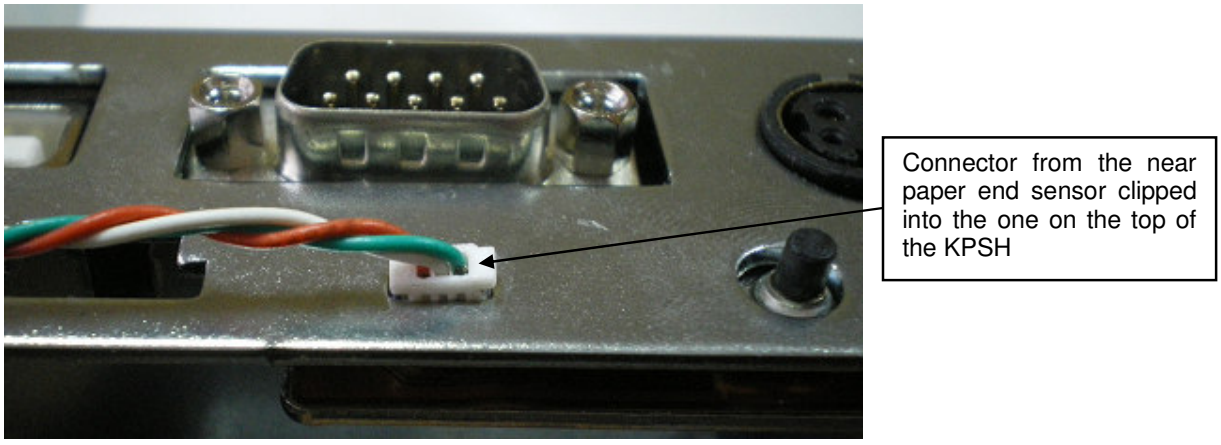
- **R_P** = Rest of paper (m)
- **EpM** = Thickness of the core (mm)
- **EpP**= Thickness of the paper (µm)
- **Dmin** = minimum Distance for the sensor to detect the paper that is the distance between the top of the metal axis and the top of the remaining diameter of the paper roll (mm)

  Dmin is included between 5.1mm & 15mm (Cf. picture & table below → the value of the middle position of the sensor is given for information)

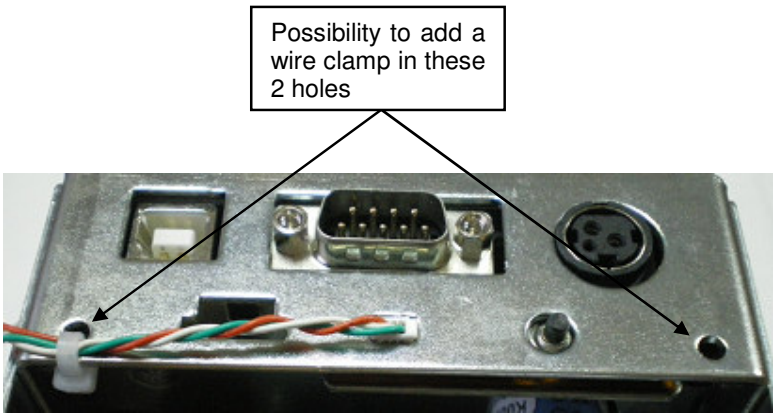

Near paper end sensor
Dmin
Core of the paper roll Min 30 mm for KPSH et KPSM version
Remaining paper on the roll still detected by the sensor
Metal axis

Position of the sensor	Bottom	Middle	Top
Distance of detection **Dmin** (mm)	5.10	10.5	15

7) Connect the near paper end sensor to the motherboard thanks to the connector located on the top of the kiosk.



8) The wires of this sensor can be blocked on the top of the kiosk thanks to a wire clamp by using the right / left hole from the metal sheet (depending on which side the paper roll holder is mounted).
A wire clamp is provided with the paper roll holder.



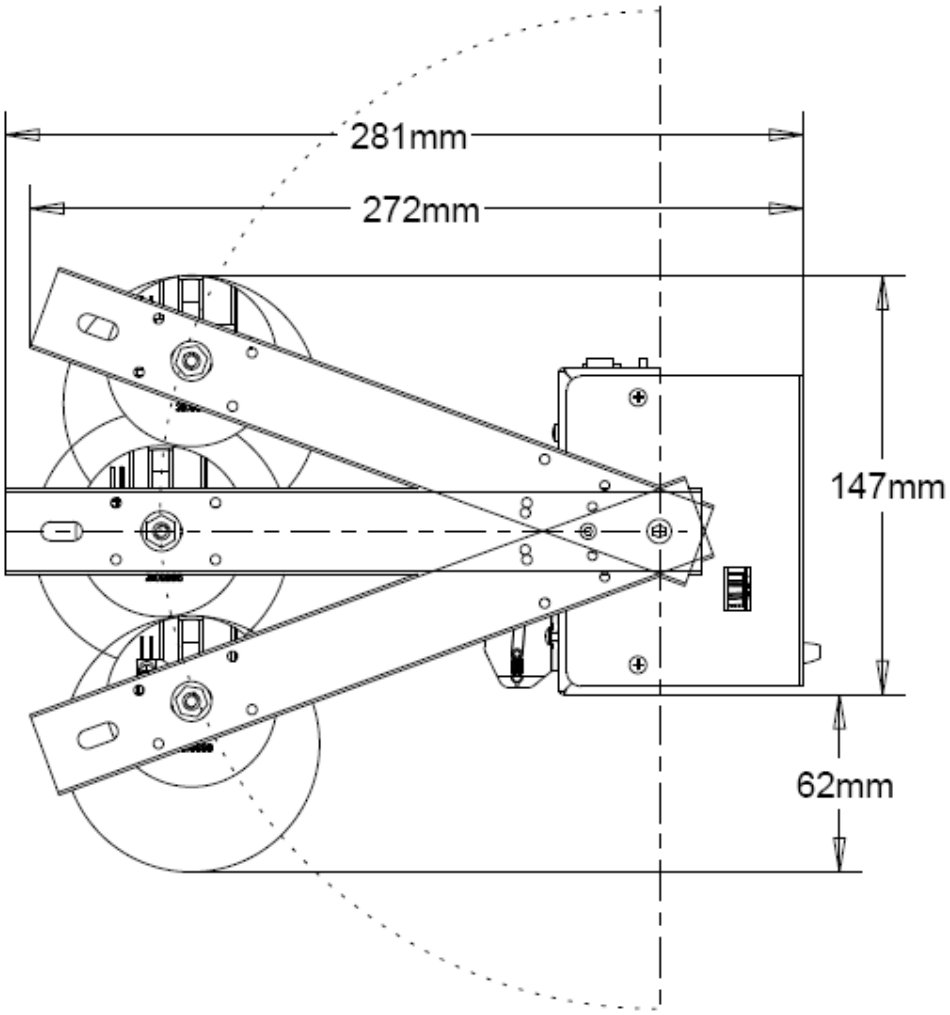
12.1.3. Overall dimension

The overall dimensions of the KPSH with the paper roll holder are given for 4 different roll diameters (Ø90mm, Ø120mm, Ø150mm and Ø200mm). Refer to the chapter 3 “OVERALL DIMENSION” if other dimensions are needed.

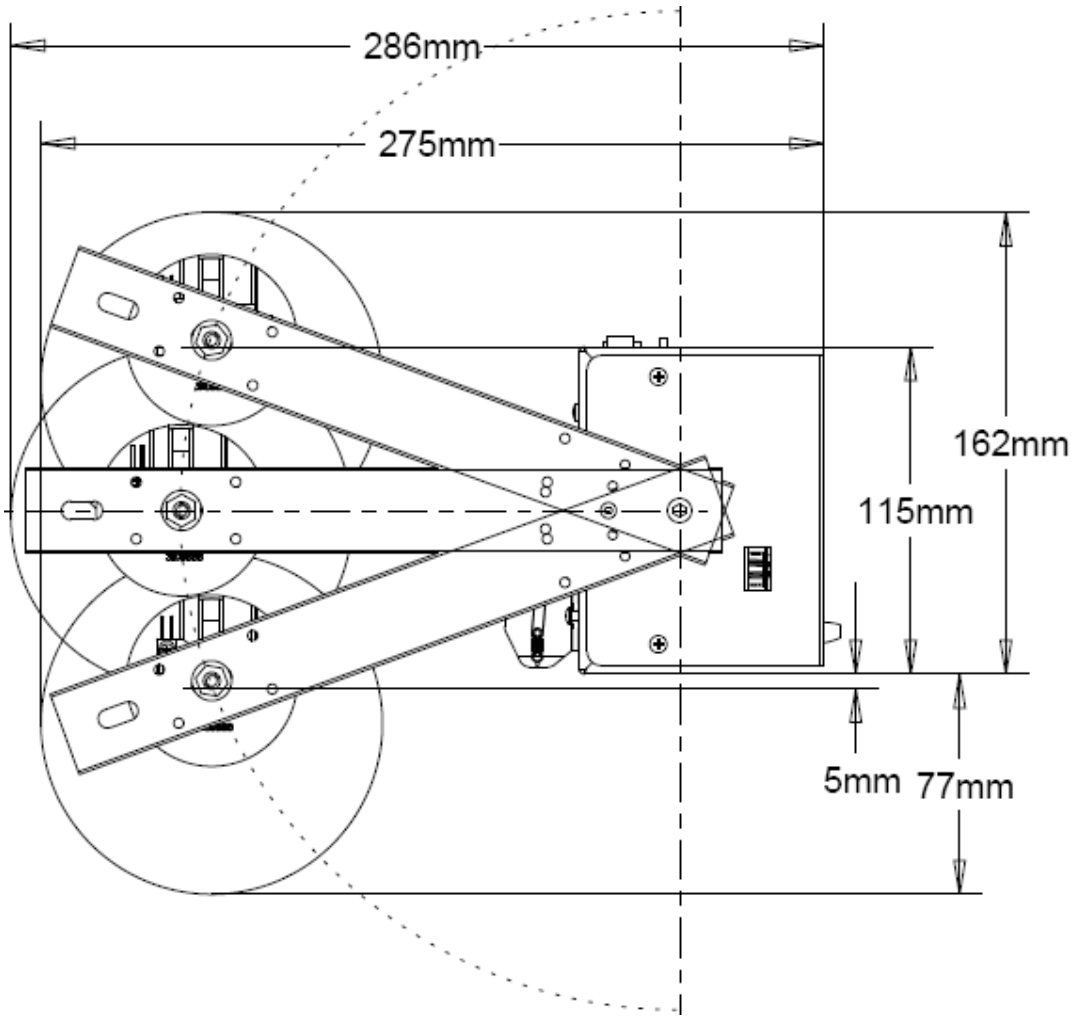
The external diameter of the hub chosen for the drawings below depends on the paper roll diameter:

- For a 90mm diameter paper roll → Overall dimension given by using a 12mm inside diameter hub.
- For a 120mm diameter paper roll → Overall dimension given by using a 12mm inside diameter hub.
- For a 150mm diameter paper roll → Overall dimension given by using a 24mm inside diameter hub.
- For a 200mm diameter paper roll → Overall dimension given by using a 24mm inside diameter hub.

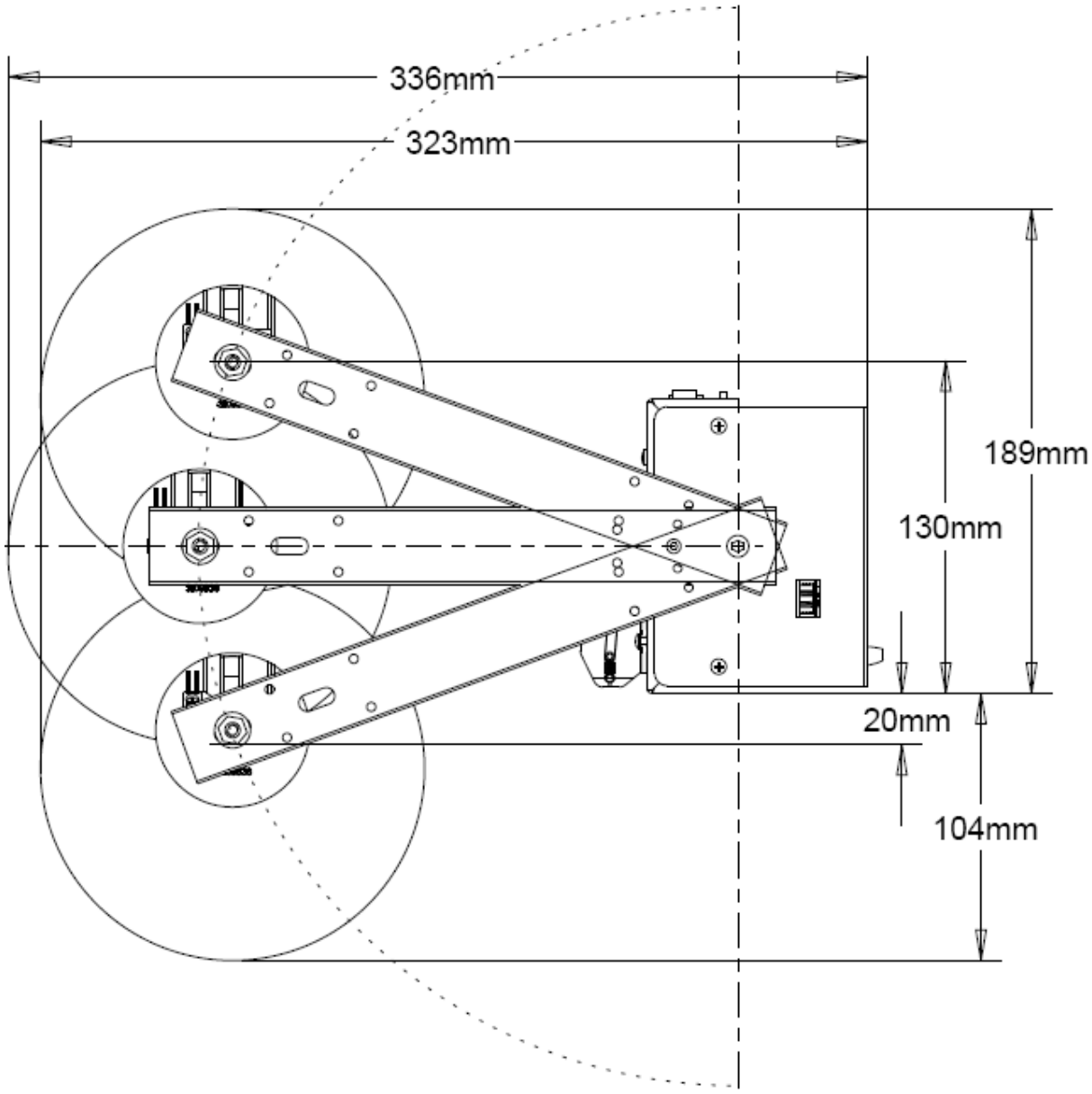
12.1.3.1. Roll Ø90mm / Axis on the 1st position



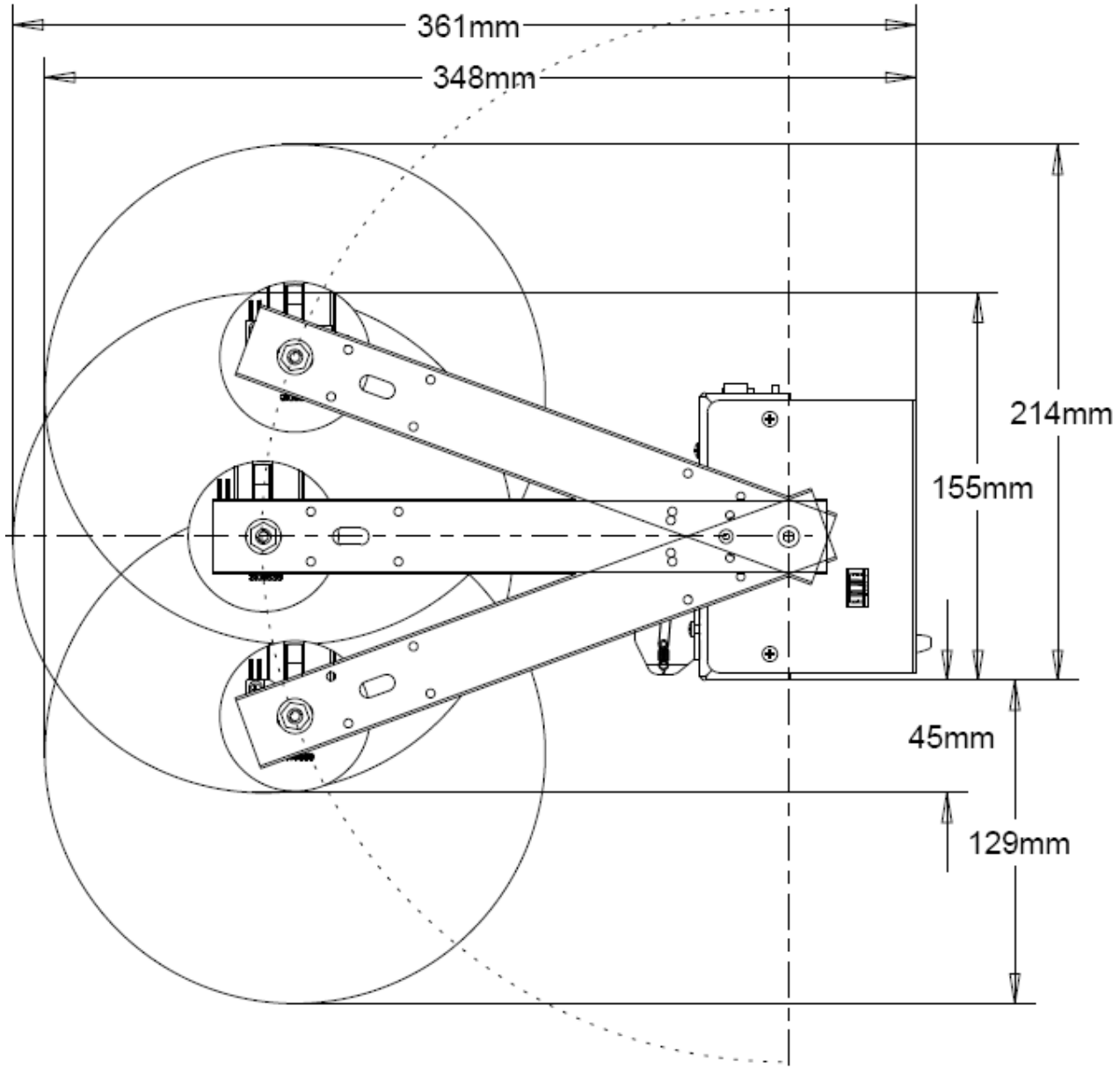
12.1.3.2. Roll Ø120mm / Axis on the 1st position



12.1.3.3. Roll Ø150mm / Axis on the 2nd position

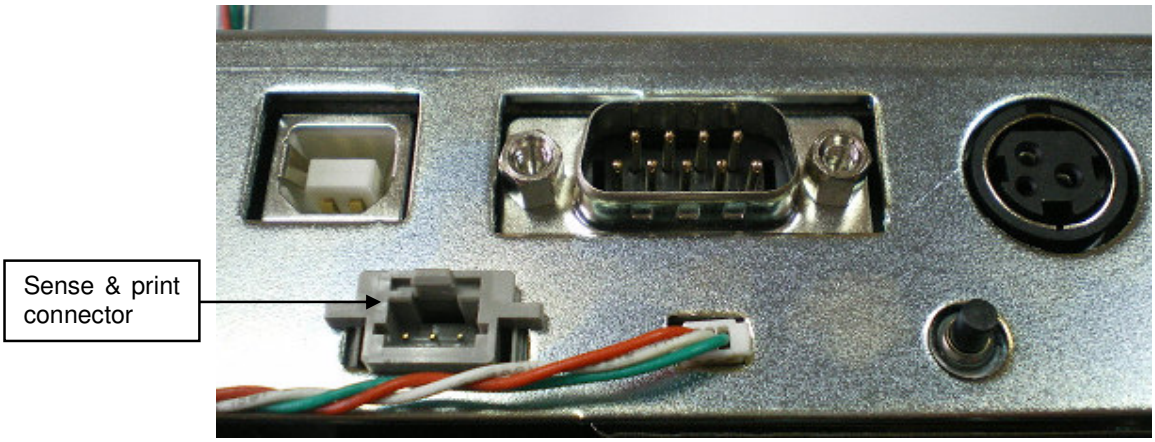


12.1.3.4. Roll Ø200m / Axis on the 2nd position



12.2. The sense & print function

A connector for a sense & print system can be added as an option for all the versions of this kiosk (KPSL, KPST & KPSH).

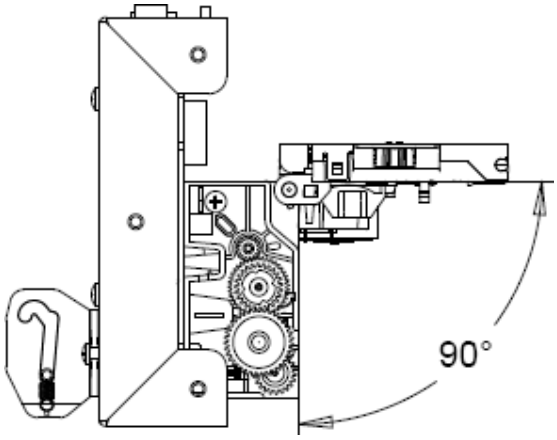


See Manual 7300449

13. RECOMMENDATIONS

13.1. General Mechanical Integration

- Leave enough room to reach easily the damping system in order to introduce correctly the paper (Cf. Chapter 10 “DAMPING SYSTEM”).
- The paper is self loaded when presented into the paper entry slot (when the printer is powered).
- Opening the kiosk (by openning the cover that contains the cutter) is only required in case of paper jams to reach the thermal printhead or for an easier cutter replacement (maintenance task).
  Never open the cover beyond its limit stop (maximum angle: 90°), otherwise the plastic part will break.



Once the printer is open, check manually that the remaining paper is positioned through the blades of the cutter (that is through the paper exit slot) otherwise, it will lead to a paper jam.

13.2. Paper exit protection

The main cause which creates a paper jam is a disruptive element that is stuck into or in front of the slot of the paper exit, such as:

- A previous ticket or any other element that clog the paper exit,
- The hand from the user which can punctually block the paper exit or hold the ticket,
- Residual static electricity into the paper chute when a chute is installed into the customer environment (it is amplified in high dry conditions),
- The curve of the paper chute which is not smooth enough can create too much friction on the ticket for a correct feed movement (it is amplified in high humidity conditions)…

Depending on your application & on the length of the ticket you may have to consider protecting the paper exit so that the ticket can not be grabbed or blocked while being printed. It can be done by installing a paper chute or a drop box.
The chute curve has to be smooth enough → It is important to prototype and test your design in different environmental conditions in order to avoid risks of paper jam.
The drop box can be a good option → In that case, make sure that static electricity will not stuck the ticket between the paper exit and the drop box, out of reach for the user. It might be necessary to add a conductive brush located at the paper exit and connected to the sheet-metal walls of the drop box which aim is to discharge the ticket.

13.3. Grounding

The sheet-metal frame of the printer must be grounded: It can easily be done via the fixing points.